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Enterprise information and communications technology initiatives for the United Nations Secretariat

Report of the Secretary-General

Summary

The present report, prepared pursuant to General Assembly resolution 65/259, provides revised proposals for the projects outlined in the report of the Secretary-General on the status of implementation of the information and communications technology strategy for the United Nations Secretariat (A/65/491). In addition, it responds to the requests made by the Assembly in paragraphs 125 and 126 of its resolution 64/243 that the Secretary-General continue to implement enterprise content management and customer relationship management systems in the context of the proposed programme budget for the biennium 2012-2013.

Pursuant to General Assembly resolutions 63/262, 63/269 and 64/243, the present report contains information on the development of a unified information and communications technology (ICT) disaster recovery plan and business continuity approach, while leveraging enterprise data centres. In particular, information is provided on four revised cross-cutting, Organization-wide initiatives that will address critical institutional needs and improve the effective and efficient delivery of the Secretariat's ICT programmes. The four initiatives are:

(a) Improve enterprise ICT management;

(b) Leverage knowledge through ICT;

(c) Enhance ICT service delivery;

(d) Create a resilient ICT infrastructure.

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The implementation of the proposals set forth in the present report will help overcome the challenges of continued fragmentation of ICT capacities and resources, the high cost of operations and the difficulties in providing effective solutions to enable the Organization to achieve its mission. Once the initiatives have been implemented, all stakeholders in the Secretariat (ICT governance bodies, the Office of Information and Communications Technology, departments, offices, regional commissions, field missions and other units) will work closely to achieve the intended goals. Together, these initiatives will provide the Organization with overarching ICT management capabilities and an efficient and resilient infrastructure that will allow the implementation of strategic programmes and improvements across the Organization in areas such as knowledge management and service delivery.

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I. Introduction

1. In its resolution 63/262, the General Assembly recognized the strategic importance of information and communications technology (ICT) and endorsed the overall approach relating to the ICT strategy for the Secretariat. In the same resolution, the Assembly decided to establish the Office of Information and Communications Technology as an independent organizational unit. The Office was expected to provide strong leadership for the development and implementation of Organization-wide ICT programmes that would effectively support the Secretariat's mission and its global operations.

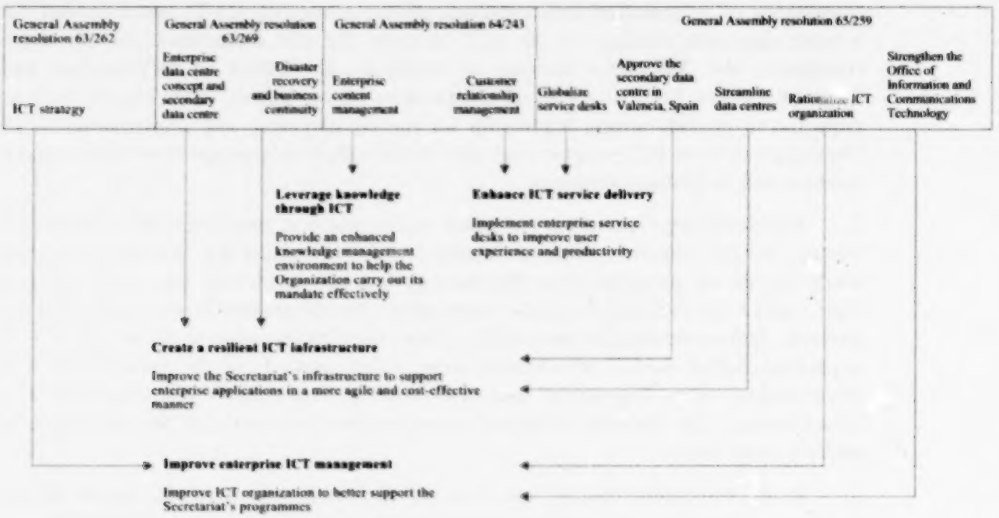
2. The Secretary-General, in his report on the status of implementation of the ICT strategy for the United Nations Secretariat (A/65/491), noted that the Secretariat had made significant progress since the strategy had been endorsed (see A/62/793 and Corr.1 and A/62/793/Add.1). In the same report, the Secretary-General described the findings and recommendations resulting from the Organization-wide review of ICT capacities, called the ICT structural review, which showed that the Secretariat's ICT environments were fragmented and non-standard, resulting in lost efficiency and effectiveness. The Secretary-General proposed that four projects be undertaken to address those issues.

3. In its resolution 65/259, the General Assembly endorsed the report of the Advisory Committee on Administrative and Budgetary Questions (A/65/575) and requested the Secretary-General to review the proposals contained in his report A/65/491 and to submit new and/or revised proposals to the Assembly in the context of the proposed programme budget for the biennium 2012-2013. The Assembly also requested the Secretary-General to report on the progress made in the establishment of a secondary enterprise data centre, including, as appropriate, financial resources proposed for its implementation, in the context of the proposed programme budget for the biennium 2012-2013.

4. The present report responds to those requests and to previous requests by the General Assembly to submit detailed and fully justified proposals for enterprise content management and customer relationship management in the context of the proposed programme budget for the biennium 2012-2013 (see resolution 64/243). It also responds to requests by the Assembly that the United Nations use enterprise data centres rather than local data centres and submit a unified disaster recovery and business continuity plan, including a permanent solution for Headquarters (see resolutions 63/262, 63/269 and 64/243).

5. In the present report, the Secretary-General proposes a set of four integrated, Organization-wide, high-impact enterprise ICT initiatives that are intended to alleviate the current issues in the ICT environment and to better meet the needs of departments and offices. These initiatives are: "Improve enterprise ICT management", "Leverage knowledge through ICT", "Enhance ICT service delivery" and "Create a resilient ICT infrastructure". Figure I illustrates the linkage between the previous General Assembly resolutions and the proposed initiatives, which are expected to bring significant qualitative and quantitative benefits to the Organization and to enhance the role of ICT as a strategic enabler for the mandates and substantive programmes of the United Nations.

Figure I
Linkage between General Assembly resolutions and the enterprise ICT initiatives


General Assembly resolution 63/262
ICT strategy
General Assembly resolution 63/269
Enterprise data centre concept and secondary data centre
Disaster recovery and business continuity
General Assembly resolution 64/243
Enterprise content management
Customer relationship management
General Assembly resolution 65/259
Globalize service desks
Approve the secondary data centre in Valencia, Spain
Streamline data centres
Rationalize ICT organization
Strengthen the Office of Information and Communications Technology
Leverage knowledge through ICT
Provide an enhanced knowledge management environment to help the Organization carry out its mandate effectively
Enhance ICT service delivery
Implement enterprise service desks to improve user experience and productivity
Create a resilient ICT infrastructure
Improve the Secretariat's infrastructure to support enterprise applications in a more agile and cost-effective manner
Improve enterprise ICT management
Improve ICT organization to better support the Secretariat's programmes

6. Implementation of the proposals set forth in the present report will provide the Organization with overarching ICT management capabilities and an infrastructure that will make it possible to implement, in a more streamlined and efficient manner, strategic programmes and improvements, including the knowledge management and service delivery initiatives, that will be required in the future. The risks associated with not implementing these initiatives include the continued fragmentation of the ICT environment, an increase in the cost of operations and difficulties in providing effective solutions for achieving United Nations mandates and better supporting the needs of departments and offices.

7. The Secretariat, in responding to the General Assembly's request and acknowledging the challenging global economic climate and current cost containment efforts, has reviewed and revised the proposals presented in previous reports and achieved the goal of presenting an integrated set of proposals that will achieve a similar impact at a significantly reduced cost. This was achieved by leveraging existing efforts and technological tools across the Organization. All the initiatives proposed in the present report were developed in consultation and collaboration with departments and offices through the ICT governance mechanisms and will be deployed through a joint effort of the Office of Information and Communications Technology and other organizational units.

II. Proposals for enterprise information and communications technology initiatives

A. Improve enterprise information and communications technology management

Background

8. An overarching organizational framework that defines how ICT activities are carried out throughout the Secretariat is essential to realizing the vision of a strong ICT for a better United Nations (see A/62/793 and Corr.1). Effective organizational structures and management processes are the blueprint for formal expectations, interactions and exchanges among internal stakeholders.

9. As the United Nations mandate has evolved over the last few decades, so have the structures and governance mechanisms in the Secretariat. With the emergence of modern technologies, ICT has become core to almost every programme activity and a fundamental building block of the Organization.

10. Over time, fragmented and non-standardized ICT capacities and resources have become ingrained in the working culture of the Organization. ICT efforts are frequently duplicated throughout the Secretariat. Existing ICT business practices, associated inefficiencies and the lack of transparency with regard to ICT capacities are a reflection of a decentralized organizational model that has evolved organically without strong central leadership.

11. In his report on investing in ICT (A/62/793), the Secretary-General made the case for the centralization of ICT structures and the transition to a federated model in which a central ICT unit is responsible for the overall strategy, policy and coordination of independent ICT units in departments and offices. The current state of ICT and the problems related to the fragmentation of ICT capacities and resources revealed by the ICT structural review were presented to the General Assembly in the Secretary-General's report (A/65/491).

12. The Secretariat is moving towards a federated model of ICT management, shifting away from local management procedures and organizational structures towards a streamlined approach that takes into account the needs at both the Organizational and local levels. While there has been some progress in this area, in order to achieve an effective organizational model for ICT it is necessary to concurrently streamline local management structures and strengthen enterprise ICT functions.

13. The initiatives proposed in the present report combine two previous interrelated proposals, the "Rationalize the ICT organization" project (structural review project 3) and the "Strengthen the Office of Information and Communications Technology" project (structural review project 4), and lay the foundation to improve the ICT organization and improve support to Secretariat programmes. At the same time, the two initiatives will rationalize local ICT management structures, minimize the existing fragmentation of the Secretariat's ICT environment and create a set of cross-cutting ICT functions that will prevent future fragmentation, ultimately enabling the full realization of benefits from ICT programmes.

Objectives

14. The goal of the "Improve enterprise ICT management" initiative is to streamline ICT functions and structures both within the Organizational and at local levels to better support United Nations programmes. The goal will be achieved by:

(a) Aligning ICT solutions with the needs of substantive entities;

(b) Creating a performance management framework to measure ICT units and resources;

(c) Reducing the fragmentation of applications and infrastructures through an ICT portfolio management function, strengthened infrastructure capacity and enhanced capacity in the enterprise application development areas;

(d) Developing an enterprise architecture framework that aligns ICT solutions with business needs;

(e) Enhancing the capacity for the development of enterprise ICT policies and strategies;

(f) Strengthening the security management function in the Secretariat;

(g) Modernizing and harmonizing ICT functions, jobs and career paths in collaboration with the Office of Human Resources Management;

(h) Defining a framework for ICT activities by creating policies on where ICT activities should be carried out;

(i) Establishing and maintaining a central repository of ICT capacities;

(j) Instituting transparency and optimizing the allocation of ICT resources.

15. By the end of the biennium 2012-2013, standards for ICT functions and jobs, as well as sourcing rules, will be defined and new ICT career paths will be created across the Organization. In close consultation with departments and offices, all ICT units in the Secretariat will be reviewed and recommendations will be presented to the General Assembly regarding organizational changes in the ICT units.

16. A management framework for measuring the performance of ICT units and resources will be established and made operational Secretariat-wide, along with a central repository of ICT personnel. This will enable the Secretariat to accurately report to Member States on the utilization of the entirety of its ICT resources. In addition, the enterprise architecture framework will be implemented across the Secretariat, enabling the Organization to forecast and plan its technology based on institutional needs. The application portfolio referred to in the report of the Secretary-General (A/65/491) revealed the existence of close to 2,000 applications, which will be reduced through sustained coordination of cross-cutting ICT functions. Additional reductions in the number of applications will be made through Umoja.

17. By the end of 2015, all proposals on ICT organizational changes that have been approved by Member States will be implemented across the Secretariat.

Box 1
Illustrative example: "Improve enterprise ICT management" initiative

Current problem

The Secretariat has 173 distinct job profiles for ICT, far more than it needs. The vast number of ICT job profiles complicates recruiting, career planning, training and mobility, and inhibits the effective allocation of ICT personnel across various ICT functions. Moreover, the existing job profiles do not reflect the transformation that has taken place in the ICT profession over the past decades. Job profiles for many crucial ICT jobs do not currently exist. For example, although an increasing number of ICT activities in the Secretariat are being carried out in the form of projects, there is no existing job profile for an ICT project manager, a post that is crucial for ensuring the delivery of projects on time and within budget.

Expected improvements

The ICT global staffing model will streamline and consolidate ICT job profiles and create ICT career paths that are compatible with the Secretariat's work environment and today's technological environment. It will facilitate staff mobility and allow ICT professionals to advance in their careers by helping them identify gaps and pursue training in a wider range of standardized, state-of-the-art job categories and competencies. Once the global staffing model has been implemented, it will be possible to identify and leverage the expertise of staff with certain ICT skills and competencies across the Secretariat. In addition, the recent efforts made to establish transparency in existing ICT personnel distribution procedures will enable the effective allocation of staff across various ICT functional areas.

18. **Organizational impact**. The benefits of rationalizing the ICT organization and strengthening the enterprise ICT management functions are summarized below.

Qualitative benefits

19. The "Improve enterprise ICT management" initiative will provide the following qualitative benefits to the Organization:

(a) **Increased transparency with regard to ICT capacities and resources and the cost of ICT services**. A global ICT human resources database will be developed to provide data on the distribution of ICT personnel and establish a baseline that can be used to properly align the planning, budgeting, forecasting and reporting processes of ICT services. Having an overview of ICT personnel across the Secretariat is essential for the strategic allocation of resources to priority projects and the efficient utilization of staff. In addition, the initiative seeks to establish ICT functions that will ensure the transparency of ICT activities across the Secretariat and global ICT human resources capacities and will define and track

metrics that measure ICT unit performance (such as ICT portfolio and performance management);

(b) **Assignment of the United Nations ICT workforce to roles that add value**. The ICT sourcing strategy that will be developed as part of this initiative will define the optimal distribution of ICT resources across the Organization. It will rationalize the number of staff and the range of skills needed to carry out ICT functions, make it possible to forecast ICT staffing needs and, ultimately, ensure that staff competencies are aligned with job requirements and business needs;

(c) **Improved staff mobility, morale, agility, accountability and talent management**. A centrally controlled, standardized ICT staffing model and the associated ICT career path model will contain standardized ICT functional titles and job descriptions for state-of-the-art functions that will enable the Organization to pursue a coherent ICT strategy and consistency among ICT activities globally and to support staff in acquiring the required competencies, skills and certifications necessary to achieve their career goals. The implementation of the ICT staffing model will increase the level of professionalism and ensure that appropriate certifications needed to perform ICT functions are obtained;

(d) **Improved quality of ICT services at a lower cost to the Organization**. The establishment of a number of cross-cutting ICT areas in the Office of Information and Communications Technology, including change management, portfolio management, enterprise architecture and performance management, will improve the coordination of ICT activities among 70 ICT units in the Secretariat, enhance compliance with promulgated ICT policies and standards and ensure closer alignment between the ICT services available and the needs of the Organization, all at a substantially lower cost to the Organization.

Quantitative benefits

20. It is projected that between 2011 and 2013 the proposals on the consolidation of ICT units at the departmental level and on the Secretariat-wide optimized distribution of ICT activities will result in a reduction in overall ICT staffing needs. ICT posts will be freed up for redeployment as a result of a more efficient organizational structure, the elimination of redundant ICT activities and increased control over existing activities. Until a review of the ICT units has been completed, it will not be possible to provide precise data on the size of the savings that can be achieved. The following paragraphs provide an overview of the redeployment strategy that will be utilized.

21. It should be noted that all proposals for staff reductions that may result from the initiatives contained in the present document will be prepared in close consultation with departments and offices and presented to the General Assembly for consideration as part of the normal departmental budget submission process. The approved proposals will be implemented in close collaboration with the Office of Human Resources Management.

22. It is anticipated that changes in the ICT management structure and distribution of ICT activities across the Secretariat will free up the following posts:

(a) Posts at the P-3, P-4 and P-5 levels for middle and lower management functions;

(b) Posts in the Professional and General Service categories for providing administrative support to decentralized ICT units;

(c) Posts in the Professional and General Service categories for application development and the maintenance of duplicative ICT solutions;

(d) Posts in the Professional and General Service categories for ICT functions, including infrastructure-related functions, that will be outsourced.

23. The above-mentioned posts could be redeployed to perform other functions, as follows:

(a) Various functions in the ICT and non-ICT area of knowledge management;

(b) Management functions in areas where the Organization lacks the capacity to support substantive programmes on issues such as humanitarian affairs and development;

(c) Cross-cutting ICT functions in the areas of enterprise architecture, portfolio management/capacity planning, strategic planning and performance management;

(d) ICT functions in the areas of business relationship management, project management and business analysis;

(e) Administrative functions within the same department.

24. In his report on human resources management reform, the Secretary-General projected that 1.9 per cent of Secretariat staff will retire each year between 2011 and 2015 (see A/65/305, table 3), which means that during that period a total of 280 staff members will retire (56 staff members annually). Such posts, freed up through attrition, could be redeployed to different ICT or non-ICT functions according to the model summarized in previous paragraphs.

25. Staff members occupying posts that might be subject to proposed redeployments within or across budget sections would be given professional training funded through this initiative, depending on the competency and professional aspirations of the staff member occupying the post, the needs of the Organization and the decision of Member States. It has been estimated that from 2013 to 2015, between $500,000 and $1,000,000 annually will be needed for change management-related activities.

26. Should staff members occupying posts that are subject to geographic redeployment have to relocate, it is expected that such relocation will take place on a voluntary basis only. If no other solution is possible, it is expected that the affected posts could be earmarked for redeployment after the staff member moves to another post or leaves the Organization.

27. Posts freed up as a result of other strategic initiatives, such as the "Enhance ICT service delivery" and "Create resilient ICT infrastructure" initiatives, could be redeployed using a similar strategy.

Implementation plan

Approach

28. In order to identify areas of the ICT organization that could be rationalized, reviews of all Secretariat ICT units will be conducted as part of this initiative. For each ICT unit that is reviewed, options for consolidating and/or eliminating the duplicative activities of various ICT units will be analysed, taking into account the ICT sourcing strategy. Summary recommendations will be made in close consultation with departments and offices and presented to Member States for their consideration as part of the established budget process.

29. Simultaneously, a number of cross-cutting enterprise ICT functions will have to be established to reduce the fragmentation of the ICT environment. An adequate level of resources for those functions, enterprise application development and infrastructure consolidation will be essential during the 2012-2013 biennium to sustain the implementation of the federated organizational structure and ensure that benefits from enterprise ICT initiatives can be realized to their fullest potential.

30. The Office of Information and Communications Technology was established in January 2009, within existing budgetary and staff levels, through the redeployment of approved resources for the Information Technology Services Division of the Department of Management and the Information and Communications Technology Division of the Department of Field Support. At present, resource levels for the Office reflect the mandate of the Office's predecessor, the Information Technology Services Division, which was primarily responsible for providing core communications, server capacity and applications to United Nations Headquarters, as well as wide area network support and limited applications and policy support to other entities within the Secretariat. Although the ICT workload has risen significantly in recent years, reflecting an annual increase of approximately 25 per cent in the demand for such services, there has not been a commensurate increase in the number of posts or other resources. Moreover, the mandate of the Office is much broader than that of its predecessor, which means that the Office requires a different level of resources, staff at different grade levels and the expertise to fulfil its new mandate. In particular, a significant resource gap exists for the funding of cross-cutting functions such as ICT policymaking, architecture and standards setting, as well as security and global portfolio management. Annex I to the present report contains information on the mandate of the Office and the level of resources available to it.

31. The organizational review of the Office, which began in 2010 as part of the structural review and was completed in 2011 as part of the "Rationalize the ICT organization" project, was meant to address the lack of capacity in critical areas. As a result, it identified a number of positions that could be redeployed within the Office to carry out cross-cutting ICT functions. It is proposed that the following posts be redeployed within the Office:

(a) One P-5 post from application maintenance (Integrated Management Information System (IMIS)) towards change management;

(b) One P-3 post from accounts management to change management;

(c) One P-5 post from application development to ICT strategic planning and policy development;

(d) One General Service (Principal level) post from application maintenance to ICT portfolio management;

(e) Two General Service posts from infrastructure management support to internal management functions;

(f) One P-2 post from application development to internal management functions.

32. These proposals are a first step and an example of the enterprise-wide adjustments that could be made throughout the Organization's ICT units on the basis of the strategy described above. The redeployment of additional Office resources, which would strain core services such as network, telephone and e-mail support services, is not a prudent option.

33. The findings of the structural review also revealed that adequate resources dedicated to cross-cutting ICT functions and enterprise application development are required in order to implement an efficient and effective ICT strategy and operations across the Secretariat and enable the Office to adequately support the Secretariat. Those functions would ensure that benefits from enterprise ICT initiatives can be realized to their full potential. They will also ensure that the Organization does not revert to the level of fragmentation and costly ICT operations currently in place.

34. Annex I to the present report summarizes 18 different functions performed by the Office. Seven of the most critical cross-cutting functions that will enable the Secretariat to make progress in implementing its ICT strategy and mitigate security risks are currently not appropriately staffed. The following areas in the central ICT unit urgently need to be strengthened:

(a) Enterprise architecture and standards;

(b) Security and risk management;

(c) Strategic planning and policy development;

(d) ICT portfolio management, including ICT financial management;

(e) ICT performance management;

(f) Business relationship management;

(g) Technology research.

35. It is therefore proposed that 14 additional posts (2 D-2, 2 P-5, 10 P-4) be established to focus on the following cross-cutting functions:

(a) **Global strategy management (1 D-2).** The complexity of the Secretariat and its ICT environment requires the establishment of a global strategic management function at a senior level in the Office of the Chief Information Technology Officer. The Director in this post must have the experience, knowledge and authority to drive the implementation of the ICT strategy across the Secretariat. By providing authoritative leadership to senior-level stakeholders and ICT governance bodies, the incumbent would ensure the convergence of interests in the Secretariat with regard to the demand for ICT services. In close consultation with the Office, the Director would be responsible for bringing about coherence of Organization-wide ICT activities and operations across 70 ICT units, including with regard to infrastructure and architecture, applications development, business process

re-engineering, networks, outsourcing and ICT operations and support. He or she would interact with internal and external stakeholders to ensure the effective implementation of the ICT strategy and continuous user satisfaction and be responsible for determining long-term Organization-wide ICT needs and developing the overall strategy for systems development and hardware acquisition and integration. The Director would be a member of the executive leadership team of the Office of Information and Communications Technology and, as such, would be expected to influence strategic decisions of the Organization regarding the use of technology;

(b) **Infrastructure management (1 D-2)**. With the establishment of enterprise data centres, the Secretariat is entering a phase in which its ICT infrastructure is becoming global. Efforts are under way to streamline and consolidate global infrastructure operations across duty stations. In this environment, it is proposed that a senior-level position at the D-2 level be established to direct and coordinate the development of the enterprise infrastructure and other operations, including global ICT disaster recovery, as well as to lead Organization-wide infrastructure harmonization efforts. The Director would also be responsible for ensuring the increased availability and reliability of the global ICT infrastructure. Ultimately, the incumbent would facilitate the achievement of infrastructure efficiencies for the entire United Nations system, as well as increase the responsiveness of the Organization to an ever-changing environment;

(c) **ICT security management (1 P-5)**. Currently, the Organization is exposed to various ICT security risks and cyberattacks and is unable to identify and address data security needs across the Organization. It is therefore proposed that an ICT security management function at the P-5 level be established to ensure that the activities of all the security functions throughout the Secretariat are more efficiently coordinated and that activities that contribute to planning, creating and implementing ICT security management are aligned with the Organization's strategic goals. In addition, the incumbent would be responsible for ensuring that information relating to ICT security is coordinated and communicated among affected stakeholders, minimizing the exposure of the Organization to ICT security risks and cyberattacks;

(d) **Enterprise application development for field offices (1 P-5)**. In order to strengthen the Organization's ability to deliver enterprise applications to the field, it is proposed that a post at the P-5 level be established to head the Field Systems Service in the Office of Information and Communications Technology, which has been operating without the P-5 post of Chief since 1 February 2009, after 10 ICT support account posts were transferred from the Information and Communications Technology Division of the Department of Field Support to the Office. By establishing this post, the Office would strengthen the coordination and management capacity for developing and leveraging common solutions that could be implemented broadly to meet the needs of staff in the field. The proposed post is also absolutely critical for day-to-day operations, including the carrying out of assessments of field mission automation needs, programme and budget planning, project and staff management, performance monitoring and the management and optimization of the portfolio of field applications. The establishment of the P-5 post of Chief of the Field Systems Service of the Office would ensure the effective delivery of field applications projects in partnership with the Information and

Communications Technology Division, in accordance with the ICT strategy of the Secretariat;

(e) **Strategic planning and policy development (1 P-4)**. In order to ensure the alignment of local and enterprise ICT strategies and the consistent implementation of the ICT strategy across 70 ICT units in the Secretariat, it is proposed that a post at the P-4 level be established to plan, develop and update the ICT strategy. The incumbent would be responsible for monitoring and reporting on the implementation of the ICT strategy across ICT units;

(f) **Enterprise architecture (1 P-4)**. Fragmented and non-standardized ICT capacities and resources are leading to the fragmentation of applications and infrastructure components, the duplication of work and an increase in associated costs for the Organization. Currently, the ICT infrastructure capability of the Organization is not able to keep up with changing business needs or to meet the ever-increasing number of technology standards. It is therefore proposed that a post at the P-4 level be established to provide overall direction and guidance, as well as a definition of enterprise architecture that effectively supports the Secretariat's overall vision, including its ICT vision. The incumbent would be responsible for functions related to the analysis, design and delivery of ICT solutions that are appropriate for the strategies of both substantive and technological areas;

(g) **Technology research (1 P-4)**. The lack of a dedicated technology research function results in the inability of the Organization to utilize emerging technologies and a slower adoption of technologies requested by departments and offices; this, in turn, means that opportunities for improving staff productivity and organizational effectiveness may be missed. It is therefore proposed that a post at the P-4 level be established to track emerging technologies and provide guidance and strategic advice on their utilization in the Secretariat. The incumbent would be responsible for coordinating Organization-wide technology research activities in cooperation with ICT units and assisting in the definition of the architecture and technology needs of the Organization based on new and emerging technologies;

(h) **ICT performance management (1 P-4)**. As the findings of the structural review indicate (see A/65/491), the Organization does not make optimal use of its ICT resources (more than 4,000 personnel and over $700 million annually). It is currently not possible to adjust the resource levels of ICT units based on achieved and planned outputs, as there are no ICT unit performance standards and established consolidated reporting mechanisms. Furthermore, the lack of performance metrics does not allow the Secretariat to analyse the benefits derived from various enterprise initiatives and propose redeployment options to Member States. It is therefore proposed that a post at the P-4 level be established to gather Organization-wide performance metrics for ICT units and establish appropriate internal and external reporting mechanisms;

(i) **ICT portfolio management (1 P-4)**. The findings of the structural review also demonstrated a lack of transparency in the way in which ICT funds are spent. The inventory of ICT capacities that has been assimilated by the structural review cannot be maintained over the long term unless appropriate processes and systems are established. It is therefore proposed that a post at the P-4 level be established to ensure transparency with regard to spending, to enable ICT investment proposals to be prioritized across departments and to ensure that

informed ICT investment decisions are made after adequate budgetary and project reviews;

(j) **Business relationship management (2 P-4)**. The lack of capacity in the business relationship management area causes misalignment between business needs and ICT solutions, a lack of responsiveness to pressing substantive needs and the inability to reduce the applications portfolio by negotiating the consolidation of similar applications across substantive areas. It is therefore proposed that two posts at the P-4 level be established to ensure the establishment, management and maintenance of strategic relationships with customers throughout the Organization. The incumbents would make sure that ICT solutions are aligned with the needs of the Organization;

(k) **Communications (1 P-4)**. The implementation of the ICT strategy creates a tremendous amount of change in the Organization. There is a direct relationship between the level of commitment to and acceptance of change within an organization and the quality of its communications. Through well-executed communications, the Office of Information and Communications Technology would be able to demonstrate the impact and value of the ICT strategy across the Organization and ensure the acceptance and adoption of ICT solutions related to the implementation of the strategy. It is therefore proposed that a post at the P-4 level be established to facilitate the change management function. The incumbent would take the lead in planning, developing and implementing large, complex communications campaigns related to ICT initiatives and the ICT strategy. The incumbent would also be responsible for managing the ICT communications strategy for the Secretariat and coordinating its implementation, promoting strategic programmes and initiatives and providing advice and expertise to ICT programme managers and other ICT staff on a range of communications issues, methods and approaches;

(l) **Human resources and financial management (2 P-4)**. When it was established in 2009, the Office of Information and Communications Technology was provided with no additional resources for human resources and financial management functions. On an interim basis, the Office borrowed positions from operational areas to cover these vital functions. It is therefore proposed that two positions at the P-4 level be established to ensure the coordination of human resources management programmes and activities and for coordinating the preparation of the budget for the support account for peacekeeping operations, the programme budget, the strategic framework and the performance reports of the Office.

36. Annex II to the present report contains a detailed proposed organization chart of the Office for the biennium 2012-2013.

Progress to date

37. In section XVII, paragraph 14, of its resolution 65/259, the General Assembly authorized the Secretary-General to proceed with the implementation of project 3 ("Rationalize the ICT organization") and decided that $1.5 million should be provided from within the resources approved for the biennium 2010-2011. In section XVII, paragraph 16, of the same resolution, the Assembly decided to approve resources equivalent to seven general temporary assistance positions at the P-4 level for 2011, of which five were to be funded from within existing resources; additional resources equivalent to two positions at the P-4 level were appropriated. Resource

requirements continue to be monitored in order to identify the $1.5 million needed for the "Rationalize the ICT organization" project and five positions for cross-cutting ICT functions, as approved by the Assembly in December 2010.

38. To date, the following activities have been completed:

(a) With the participation of ICT governance bodies, including the ICT Executive Committee, the ICT Advisory Group and the ICT Management Coordination Group, the definition of ICT functions and jobs, as well as ICT sourcing rules, have been refined;

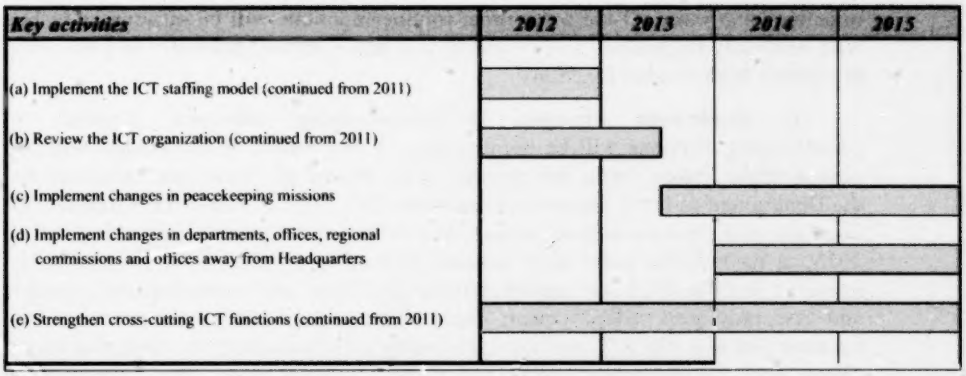
(b) The criteria and process for departmental review of ICT units have been designed and an initial set of data on a number of departments is being collected and consolidated;

(c) The organizational review of the Office of Information and Communications Technology has been completed and proposals to rationalize the structure and strengthen cross-cutting functions have been included in the present report;

(d) Work has begun towards achieving Secretariat-wide agreement on ICT job descriptions and career paths, through discussions with chiefs of ICT units from across the Secretariat;

(e) Recruitment is under way for the two general temporary assistance posts at the P-4 level that have been funded so far, to be assigned to the functional area of strategic planning and policy development.

Figure II
Schedule of the "Improve enterprise ICT management" initiative


Key activities
2012
2013
2014
2015
(a) Implement the ICT staffing model (continued from 2011)
(b) Review the ICT organization (continued from 2011)
(c) Implement changes in peacekeeping missions
(d) Implement changes in departments, offices, regional commissions and offices away from Headquarters
(e) Strengthen cross-cutting ICT functions (continued from 2011)

39. As already noted, recommendations for organizational changes to ICT unit structures and post redeployments will be prepared in close consultation with departments and offices and presented to the General Assembly as part of the appropriate budget submissions.

40. Recommendations on changes to the organizational structure of peacekeeping missions will be presented to the General Assembly, as required, as part of the peacekeeping budget submissions for 2013-2014 and 2014-2015.

41. Recommendations on changes to the organizational structure of departments, offices and regional commissions will be presented, as required, to the General Assembly as part of the proposed programme budget for 2014-2015.

42. At the same time, efforts will be made to establish the most critical cross-cutting ICT functions during the biennium 2012-2013.

43. Any redeployments to cross-cutting functions will be recommended to the General Assembly or requested as part of the established budget process during the 2014-2015 biennium, once the organizational reviews have been completed.

44. The following key activities will be taken in order to achieve the objectives of this initiative (see figure II above):

(a) **Implement the ICT staffing model**. Activities include: implementing the ICT global staffing model, standardized functional titles and job descriptions in close consultation with the Office of Human Resources Management;

(b) **Review the ICT organization**. All ICT units in the Secretariat will be reviewed. Once agreements have been reached with each organizational unit, recommendations will be made on structural changes to ICT units, their reporting position within departments and offices and a clear division of labour among ICT service providers; those recommendations will be presented to the General Assembly. The recommendations will be submitted according to the regular budget and peacekeeping budget cycles to allow the Assembly to consider the proposals as part of the normal budget process. Recommendations will vary by unit, depending on whether the activities currently performed by a unit are considered to be ICT activities governed by ICT standards, policies and job descriptions and whether those activities should be performed on the basis of agreed sourcing rules, taking into account the need to balance business unit responsiveness, ICT efficiency and organizational risks. At the same time, routine functions will be outsourced in line with Assembly resolutions 59/289 and 55/232 and staff will gradually be transferred to perform higher value functions;

(c) **Implement changes in peacekeeping missions**. Changes in peacekeeping missions will be implemented in two waves, in accordance with the peacekeeping budget cycle. An organizational review of "wave one" missions and the Department of Field Support will run from July 2011 to mid-2012. Proposals for organizational changes will be presented to the General Assembly in the first half of 2013, at its resumed sixty-sixth session. Following a decision by the Assembly, expected in June 2013, the implementation of "wave one" organizational changes and associated post redeployments could begin in July 2013. It is estimated that between 600 and 700 ICT personnel, including contractors, will be reviewed during "wave one" for the peacekeeping and support account cycle. The organizational review of "wave two" missions will run from July 2012 to July 2013. Proposals for organizational changes will be presented to the General Assembly in the first half of 2014, at its resumed sixty-seventh session. It is estimated that approximately 2,199 ICT personnel, including staff and contractors, will be reviewed during "wave two". The implementation of organizational changes and the associated redeployment of posts in the remaining missions across the Secretariat could begin in July 2014 and might continue until the end of 2015;

(d) **Implement changes in departments, offices, regional commissions and offices away from Headquarters**. The changes will be implemented according

to the regular budget cycle. All departments, offices and regional commissions will be reviewed between January 2011 and June 2012. It is estimated that more than 1,300 ICT staff, including contractors, will be reviewed during the regular budget cycle. This phase of the organizational review will be completed by the middle of 2012. Departments will submit proposals for organizational changes as part of the next regular budget cycle at the end of 2013. Following a decision by the General Assembly, expected in December 2013, the implementation of organizational changes and associated post redeployments could commence in January 2014;

(e) **Strengthen cross-cutting ICT functions**. In parallel with the rationalization of local ICT structures, the cross-cutting enterprise ICT functions will be reviewed with a view to prioritizing their strengthening in three phases. Phase one, which was completed in 2011, involved the approval by the General Assembly of general temporary assistance equivalent to seven posts at the P-4 level, to be used for most critical cross-cutting ICT functions. Additional capacity in cross-cutting ICT functions will be needed during 2012-2013 and is being requested at this time, as described in the above paragraphs. Phase two involves the review by the Office of Information and Communications Technology of its own organizational structure and the identification of a number of posts suitable for redeployment during the biennium 2012-2013 (see para. 31 above). Regarding the posts that will be required during the biennium 2014-2015, a proposal will be made in phase three for redeployments or for the establishment of new posts, pending the results of the organizational reviews of the ICT units.

Resource requirements

Table 1
Total resource requirements for the implementation of the "Improve enterprise ICT management" initiative

(Thousands of United States dollars)

Object of expenditure	*2012-2013*
Posts	2 883.6
Other staff costs	1 346.6
Travel of staff	150.0
Contractual services	498.0
General operating expenses	2 973.7
Furniture and equipment	502.0
Total	**8 353.9**

Resource requirements for the biennium 2012-2013

Posts

45. The amount of $2,883,600 would cover the salaries ($1,984,600) and common staff costs ($899,000) for the establishment of 14 posts (2 D-2, 2 P-5, 10 P-4) to carry out the cross-cutting functions set out in paragraph 35 above.

Other staff costs

46. The amount of $1,346,600 would cover general temporary assistance to carry out activities related to project 3 ("Rationalize the ICT organization"), equivalent to two posts at the P-5 level, two posts at the P-4 level and one post at the P-3 level for 12 months each in 2012, and one post at the P-4 level for an additional 6 months in 2013, to carry out activities and deliverables associated with implementing the ICT jobs and functions, associated organizational changes, ICT global staffing model and strategic workforce planning framework. The incumbents would be responsible for the day-to-day management and reporting of project activities, the establishment of stakeholder analyses and engagement plans to prepare for the changes staff will face, the performance of organizational risk and readiness assessments for the departments that will need to undergo changes, conducting high-level negotiations with departments on ICT boundaries and sourcing, drafting job descriptions and collaborating with the Office of Human Resources Management in post reclassification efforts.

Travel of staff

47. The amount of $150,000 would cover the cost of official travel of staff for data-gathering sessions, meetings and briefings relating to the assessment, analysis and design of the project in the most heavily affected departments and offices away from Headquarters.

Contractual services

48. The amount of $498,000 would cover requirements for change management for the estimated 5 to 10 per cent of ICT staff that will be redeployed towards different job functions.

General operating expenses

49. The amount of $2,973,700 would cover the rental of premises, minor alterations to premises, telephone and facsimile services in connection with the establishment of the proposed posts and the continuation of general temporary assistance, as follows: two posts at the P-5 level (1 Senior Project Manager and 1 Change Manager), two posts at the P-4 level (2 Business Analysts with expertise in ICT organizational design and workforce management) and one post at the P-3 level (1 ICT Human Resources Management Expert). Incumbents of these posts will perform activities and produce deliverables associated with implementing the definition of ICT functions, associated organizational changes, the ICT global staffing model and the strategic workforce planning framework.

Furniture and equipment

50. The amount of $502,000 would cover the cost of furniture and equipment for the proposed additional posts, including office furniture and office automation equipment.

Biennium 2014-2015 and beyond

51. A preliminary cost forecast for the remainder of the project (approximately between $1 million and $2 million for the additional ICT staff who will be

redeployed towards different functions, excluding the continuation of established posts for the cross-cutting functions) has been estimated as accurately as possible. However, the forecast will be updated in subsequent progress reports and requirements will be dealt with in accordance with established budgetary procedures as further details become available.

52. Table 2 provides a summary of current authorized and proposed post requirements, by level and year.

53. It is proposed that all the new posts mentioned in the present report be established on 1 January 2012. In accordance with the recommendation of the Advisory Committee on Administrative and Budgetary Questions that information on the delayed impact of posts be reflected in any new proposals (see A/62/7, para. 20), it is noted that the delayed impact on the budget for the biennium 2014-2015 of the proposed 14 posts is currently estimated at $2,325,600.

Table 2
Post requirements for the Office of Information and Communications Technology

	Established regular budget posts		*Temporary posts*[a]							
			Other assessed		*Extrabudgetary*		*Proposed in this report*[b]		*Total*	
Category	*2010-2011*	*2012-2013*	*2010-2011*	*2012-2013*	*2010-2011*	*2012-2013*	*2010-2011*	*2012-2013*	*2010-2011*	*2012-2013*
Professional and higher										
Assistant Secretary-General	1	1	—	—	—	—	—	—	1	1
D-2	1	1	—	—	—	—	—	2	1	3
D-1	4	4	—	—	—	—	—	—	4	4
P-5	13	13	—	—	—	—	—	2	13	15
P-4/3	51	51	7	7	1	1	—	10	59	69
P-2/1	7	7	3	3	—	—	—	—	10	10
Subtotal	**77**	**77**	**10**	**10**	**1**	**1**	**—**	**14**	**88**	**102**
General Service										
Principal level	11	11	1	1	2	2	—	—	14	14
Other level	48	48	1	1	9	9	—	—	58	58
Subtotal	**59**	**59**	**2**	**2**	**11**	**11**	**—**	**—**	**72**	**72**
Other										
Trades and Crafts	1	1	—	—	—	—	—	—	1	1
Subtotal	**1**	**1**	**—**	**—**	**—**	**—**	**—**	**—**	**1**	**1**
Total	**137**	**137**	**12**	**12**	**12**	**12**	**—**	**14**	**161**	**175**

[a] Three P-4, four P-3, three P-2, one General Service (Principal level) and one General Service (Other level) financed from the support account for peacekeeping operations (Other assessed); and one P-4, two General Service (Principal level), nine General Service (Other level) posts financed from the telecommunications support account (extrabudgetary).

[b] Posts proposed in the present report to be funded through a cost-sharing mechanism.

B. Leverage knowledge through information and communications technology

Background

54. In today's increasingly technology-driven global environment information is abundant. The impact the United Nations is able to make on the world depends upon the knowledge of its staff and the quality of the information it collects, collates and publishes. Increased electronic access to information, the evolution of the World Wide Web and advanced content management technologies affect the way the United Nations works. In order to take advantage of institutional knowledge in this changing global environment, a re-evaluation of the Secretariat's knowledge management culture, policies, processes and technology is required.[1]

55. The United Nations must effectively capture, retain and share knowledge in order to better analyse, synthesize and present information to all stakeholders in a timely manner, thus enabling the Organization to respond better to the world's needs. In a number of reports and resolutions, the Secretary-General, the Office of Internal Oversight Services and the General Assembly have highlighted the need for the Organization to improve knowledge-sharing internally and externally (see A/59/79, A/62/793, A/64/477 and E/AC.51/2006/2, as well as Assembly resolutions 63/100, 63/248 and 63/262). In that regard, the Assembly has, in its resolutions 63/262 and 64/243, recognized the benefits of the enterprise content management system and has requested the Secretary-General to: enhance technology tools for the management of content, take advantage of technology advances in the marketplace, improve, in a cost-effective manner, the expeditious dissemination of content, ensure that all duty stations are given equal treatment in respect of the application of modern technologies, and explore best practices and lessons learned. In its resolution 64/243, the Assembly requested the Secretary-General to submit a fully justified proposal in the context of the proposed programme budget for the biennium 2012-2013.

56. A knowledge management road map was developed through a collaboration between departments and offices, discussions within the Working Group on Knowledge Management and with the assistance of knowledge management experts. Through these efforts, it became apparent that the Organization does not fully harness the power of knowledge management and technologies, and that there are urgent institutional needs for improving knowledge management practices. The prevalence of inconsistent knowledge management activities and inconsistent use of technological tools continues to impede the Organization's ability to carry out its programmes effectively while needlessly increasing the cost of operations.

57. Several key challenges to the current knowledge management environment at the United Nations will be addressed through the "Leverage knowledge through ICT" initiative. These are:

(a) The lack of Organization-wide standards for web publishing, which has resulted in a confusing navigation scheme and difficult access to information

[1] In this report, the term "information" refers to the products of the substantive work of the United Nations (e.g. documents, images, web pages, video clips, etc.); the term "knowledge" refers to ideas or concepts derived from information (e.g. analyses, assessments, decisions, etc.); and the term "content" combines both information and knowledge generally.

through the Organization's main web presence (www.un.org) and the many other departmental websites. In addition, the Organization's information governance, processes and technology tools are inadequate and have hindered the systematic sharing of knowledge across the Organization. Each department and office has its own web designers and templates. This increases the time and effort needed to navigate and maintain existing websites and to create new websites;

(b) Collaboration continues to take place mostly through e-mail, although the limited implementation of the online collaboration tool "e-Room" has improved the sharing of information among committees and working groups. Most documents are approved in an ad hoc manner through e-mail. Even where information-sharing workflows do exist, automation is minimal and multiple steps must be carried out manually. E-mail serves as the primary repository for many documents and is the main distribution method. Sending content by e-mail results in lack of management of the content and the proliferation of versions. There is currently no Organization-wide technological platform for easily locating and connecting with subject-matter experts in different areas, nor is there a mechanism to facilitate electronic discussions;

(c) There is no centralized document repository, hindering the management of all types of content produced in the Organization. Security classification and access control is limited. A large amount of content is stored on network drives where documents are poorly organized and controlled. Other than the Official Document System (ODS), there is no authoritative source of electronic content in the Organization;

(d) As content stored on network drives does not incorporate basic taxonomical classification criteria and metadata, it is difficult to search and use the content. The search function in ODS has been improved, making it possible to use metadata to find documents, which is a best practice. However, repositories such as www.un.org do not make use of metadata to facilitate searches. Further, it is not possible to perform a search across websites, ODS and e-Room.

58. The "Leverage knowledge through ICT" initiative will strive to address these systemic problems. The initiative will be undertaken by the Office of Information and Communications Technology in close collaboration with departments and offices.

Objectives

59. The proposals set forth in the present report are intended to create an integrated knowledge management environment in the United Nations Secretariat through the achievement of the following objectives:

(a) **Create enterprise-wide platforms**. Centralized, secure, authoritative and trusted information resources will be established to support Headquarters, offices away from Headquarters, regional commissions, field missions, Member States and important United Nations initiatives, such as the Millennium Development Goals and climate change initiatives;

(b) **Improve and enhance analysis and decision-making support capabilities**. Producing, capturing and sharing knowledge is a central part of the work of the United Nations. Processes for collaborative drafting, reviewing and approving documents will be developed. Content authoring processes will also be

enhanced. These improvements will help United Nations knowledge workers to analyse issues and make decisions more effectively;

(c) **Improve information management policies and processes**. Global policies, standards, records management practices and guidelines that will govern the consistent formulation, use and management of knowledge will be agreed upon and implemented across the Secretariat;

(d) **Improve the organization, accessibility and usability of information**. Departments and offices will be empowered to successfully implement and manage their information;

(e) **Retain institutional knowledge**. Capturing and sharing best practices and lessons learned will streamline the work of the Secretariat, support communities of practice and provide knowledge resources for effectively dealing with global initiatives and issues in the future;

(f) **Facilitate and enhance knowledge sharing and collaboration**. Collaboration processes, document management practices, websites and social media tools will enhance the ability of the Organization's departments and offices to collaborate with each other and with partners outside the United Nations and to connect with people, resources and knowledge;

(g) **Improve the management of websites and their content**. Internal and external websites will be managed effectively through streamlined web policies, effective navigation, the capture of metadata, standardized templates and structured workflows for creating and publishing content.

Organizational impact

60. The full implementation of the "Leverage knowledge through ICT" initiative will have a significant impact on the whole Organization.

Qualitative benefits

61. The "Leverage knowledge through ICT" initiative will also provide the following qualitative benefits to the Organization:

(a) **Enhanced knowledge creation and sharing within the Secretariat**. This will be achieved by making it easier to access and share information and by improving collaboration among United Nations personnel. The initiative will also enable greater reusability of information through the use of standardized templates and deliverables for common activities and functions. Best practices and lessons learned will be applied;

(b) **Improved ability to respond quickly to crises and a changing global environment**. This will be achieved by enhancing the means to search, capture, reuse, integrate, analyse and communicate information. More accurate and informed analyses will lead to better crisis decision-making and improved flexibility in a changing environment;

(c) **Increased accuracy and security of information and better records management**. This will be achieved by better managing information and by clearly defining custodianship, metadata, records management processes, retention schedules, information security and audit;

(d) **Improved retention of institutional memory and business continuity**. This will be achieved through the systematic, long-term preservation of the Organization's intellectual assets;

(e) **Increased visibility of the United Nations**. This will be achieved by providing better services to Member States and other stakeholders, including improved accessibility to up-to-date content, documents, websites and other sources related to United Nations activities;

(f) **The ability to create and use knowledge remotely**. This will enable United Nations personnel to work more effectively and productively regardless of the time and their physical location. Having teams that can access the same information at any time and from anywhere will enhance the Organization's outputs and impact.

Quantitative benefits

62. The exact amount spent on knowledge management activities is currently unavailable, but it is estimated to be very large given the extensive fragmentation of the content management processes, tools and resources of the Organization. After full implementation, it is estimated that the overall savings from this initiative will be between $23 million and $28 million on an annual recurring basis (see annex IV). Some savings will be achieved as initiatives progress and it is expected that the full savings will be realized one year after full implementation. Listed below are the estimated savings:

(a) **Information sharing**. The improved availability of knowledge through enhanced collaboration and search capabilities will reduce the time needed by staff to find information. The ability to review and approve documents through collaborative workflows instead of manually or through e-mail will result in more effective content management and more efficient processes. Total annual savings are estimated at between $9.2 million and $11.2 million;

(b) **Virtual meetings**. The introduction of web-based meetings will yield savings in travel and information sharing. Total annual savings are estimated at between $3.5 million and $4.3 million;

(c) **Content and technology optimization**. By consolidating applications and repositories and by using standardized templates, United Nations personnel will need less time to manage applications and develop content. Total annual savings are estimated at between $4.7 million and $5.7 million;

(d) **Reduced printing**. Savings can be achieved by using electronic content instead of printouts and reducing the amount of space dedicated to filing cabinets for storage. Total annual savings are estimated at between $1.4 million and $1.8 million;

(e) **Content organization and access**. Improved content classification and metadata standards will increase staff productivity by making it easier to locate and access information. Total annual savings are estimated at between $4 million and $4.9 million.

Table 3
Estimated annual recurring benefits by category for the "Leverage knowledge through ICT" initiative

(Millions of United States dollars)

Functionality	*Low end of estimate*	*High end of estimate*
Information sharing	9.2	11.2
Virtual meetings	3.5	4.3
Content and technology optimization	4.7	5.7
Reduced printing and storage	1.4	1.8
Content organization and access	4.0	4.9
Total	**22.8**	**27.9**

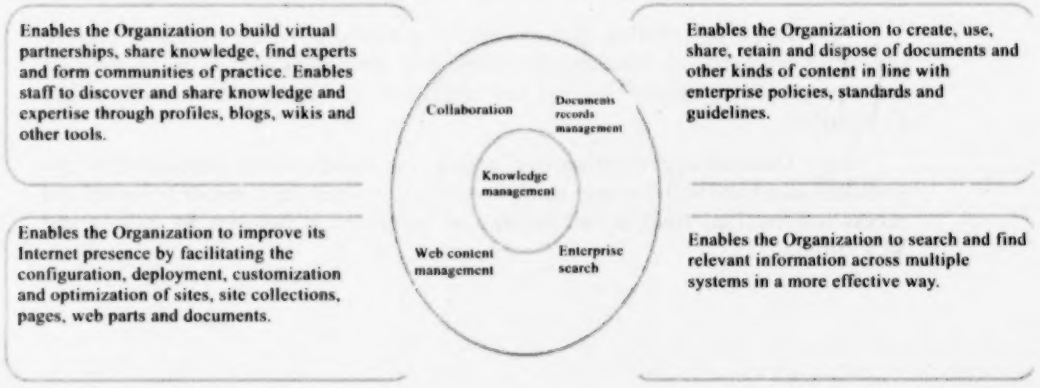
Implementation plan

Approach

63. The "Leverage knowledge through ICT" initiative strives to implement a set of core knowledge management capabilities that must work together in an integrated manner. This approach reduces the redundancy of legacy systems and provides a common knowledge management platform that will be leveraged and shared by all United Nations personnel. Each component of the knowledge management process is essential for accomplishing the Organization's knowledge management goals.

64. The integrated set of core knowledge management capabilities (see figure III below) to be implemented at each duty station includes: collaboration, documents/records management, web content management and enterprise search. These components must be implemented together in order to improve the ability of the Organization to gather, analyse, synthesize and present information throughout the entire lifecycle of institutional knowledge and make knowledge more accessible to all stakeholders, worldwide. This initiative promotes the development of new approaches and skills, including the adoption of Organization-wide knowledge management policies, practices and technology tools.

Figure III
Components of the "Leverage knowledge through ICT" initiative


Enables the Organization to build virtual partnerships, share knowledge, find experts and form communities of practice. Enables staff to discover and share knowledge and expertise through profiles, blogs, wikis and other tools.
Collaboration
Documents records management
Knowledge management
Web content management
Enterprise search
Enables the Organization to create, use, share, retain and dispose of documents and other kinds of content in line with enterprise policies, standards and guidelines.
Enables the Organization to improve its Internet presence by facilitating the configuration, deployment, customization and optimization of sites, site collections, pages, web parts and documents.
Enables the Organization to search and find relevant information across multiple systems in a more effective way.

65. The implementation of the "Leverage knowledge through ICT" initiative requires the full support of departments and offices. To achieve success and ensure the adoption of improved knowledge management policies, processes and technology tools, this initiative must be planned and coordinated through well-organized governance mechanisms. The ICT Executive Committee, the ICT Advisory Group, the Working Group on Knowledge Management and managers of departments and offices must actively support the initiative by providing guidance and incentives to and communicating with United Nations personnel. Furthermore, in order to maximize benefits, it is critical that the initiative be seen as an enterprise-wide endeavour that enjoys the full endorsement of the Secretary-General and Member States.

66. The "Leverage knowledge through ICT" initiative will ultimately affect the entire Secretariat, Member States and other stakeholders. Due to this far-reaching impact, prudent change management activities will be included to ensure the adoption of new policies, processes and technology tools and minimize the disruptions to the Organization during implementation. These activities will include just-in-time web-based training, communications campaigns, readiness assessments and stakeholder workshops.

Collaboration

67. The collaboration component of the "Leverage knowledge through ICT" initiative will enable and promote transparency and teamwork by connecting United Nations personnel located worldwide, thus enhancing their ability to share information and work together effectively. In 2008, the first collaboration tool, e-Room, was introduced to the Organization as a secure virtual workspace that allowed committees, staff and teams to collaborate and share content. This tool is currently being used successfully by more than 3,000 users. Building upon this success, the goal is to provide even more modern tools, such as "wikis", "blogs" and "tagging".[2]

68. Through the use of these tools, United Nations personnel will be able to connect and consult with one another electronically and find staff with the expertise and experience required to carry out their work. The use of advanced communications and virtual meeting tools has begun on a limited basis in parts of the Organization but will be extended to all communities of practice[3] and, over the next two bienniums, to more organizational units throughout the Secretariat.

[2] "Wikis" provide a collaborative workspace where people contribute directly to content. "Blogs" enable individuals to regularly provide commentary or to describe events. "Tagging" allows individuals to apply keywords to information they want to access quickly and easily.

[3] A "community of practice" is a group of people who share an interest, a craft, and/or a profession. The group can evolve naturally because of the members' common interest in a particular domain or area, or it can be created specifically with the goal of gaining knowledge related to their field. It is through the process of sharing information and experiences that the members learn from each other and have the opportunity to develop personally and professionally. Communities of practice can exist online, such as within discussion boards and newsgroups, or in real life, such as in a lunch room at work, in a field setting, on a factory floor or elsewhere.

Box 2
Illustrative example: collaboration

Current problem

A staff member working on economic development in Asia needs to consult with United Nations experts on environmental issues. The staff does not know where to start looking for the experts and how to determine whether a person, if found, is an expert or not.

Expected improvements

Collaboration tools for networking allow experts to post profiles containing links to past experience and publications. The staff member can search the community of practice using this tool to find the experts and ask them questions, form a new community and include them in a project. Once the project is formed, all the members of the network can share information easily and efficiently through these tools.

Documents/records management

69. The Organization devotes a significant amount of time and resources to creating, editing, reviewing, sharing and storing a large volume of documents on a daily basis. However, the lack of centralized repositories, common processes and standard technology tools in this area creates ineffectiveness and productivity loss. The Organization can improve the current conditions through the introduction of modern document/records management processes and technology tools.

70. Much of the foundational work for this component has already begun. On the basis of an enterprise content management road map developed in 2009, a standard documents/records management system was developed late in 2010. The system is designed to provide a centralized, secure and scalable repository for all types of United Nations documents (official, unofficial and other), which can be accessed and searched by any user with appropriate privileges. Its main functionalities include: creating document management workflows; enabling document library services such as check-in, check-out and version control; reporting on document access records; declaring content as records and managing retention and disposal rules and schedules; securing access to documents; and digitizing paper documents. The system can also automate cross-cutting content-driven business processes such as collaborative authoring, reviewing and approval of official documents.

71. The project will be implemented over two bienniums (2012-2013 and 2014-2015) and will include the deployment of key document and records management systems, the development of service delivery support and the automation of organizational processes. To start, the system will be implemented and the upstream process of authoring official documents will be automated in at least one business unit in each of the following locations: United Nations Headquarters, offices away from Headquarters, the regional commissions and field offices. The Office of Information and Communications Technology will provide service support for the knowledge management applications and help with digitization efforts at

Headquarters and in other duty stations. In addition, ODS will be migrated to the system to improve its functionality and reliability.

72. Once implemented, the system will be one of the most pervasive systems utilized in the Organization. All United Nations personnel who create and use documents will benefit from the system. Staff members of all categories, grades and locations will use the system to capture, manage, find, reuse, retain and disseminate relevant documents daily. Member States and other stakeholders will also use the system to manage content related to their interactions with the United Nations.

Box 3
Illustrative example: documents/records management

Current problem

General Assembly documents are authored by departments in an ad hoc manner without the use of standard document templates and the documents are edited and reviewed by e-mail. Multiple copies are stored on the hard drives of local computers and network drives that are hard to search, resulting in significant productivity loss and difficulties in reusing a document to create other documents.

Expected improvements

General Assembly documents are authored using the new documents/records management system, which will make it possible for documents to be created easily and collaboratively by different staff members, using standard formats, easily locatable data, version control and automatic workflows, thus enforcing an automatic approval process. The content will be stored as a record for institutional memory and will be available for reuse in the future.

Web content management

73. The web content management component will ultimately organize the United Nations internal and external websites into a cohesive global system of knowledge portals. While there has been some progress in this area, a weak and fragmented governance and operational framework for websites has resulted in the ad hoc development of a multitude of incompatible and, in many cases, inadequate web content management tools. In turn, this has made it difficult to find information, as well as increased costs and security risks. Many departments and offices have requested a modern web content management system to meet their website management needs, yet the Organization has not been able to provide a robust enterprise solution to date.

74. The web content management project will first create an "iSeek 2.0" (iSeek is the Secretariat's Intranet) that integrates knowledge sharing into a cohesive environment, allowing United Nations personnel to work in a more effective and efficient manner. The development work will be piloted using selected United Nations Internet websites and subsequently applied to the high-impact United Nations websites, including www.un.org. Ultimately, the web content management

system will be based on a global platform built in accordance with appropriate governance rules for policies, procedures, guidelines and standards and with support services that oversee and streamline the creation of new, high-quality websites that are well defined, integrated and properly managed. With well-functioning websites, the Organization will be able to effectively communicate and share its substantive outputs internally and externally.

Box 4
Illustrative example: web content management

Current problem

It is very difficult to navigate, access and find information at www.un.org. Every departmental website looks different, as the sites are developed independently with no consistent brand, look, feel or information architecture.

Expected improvements

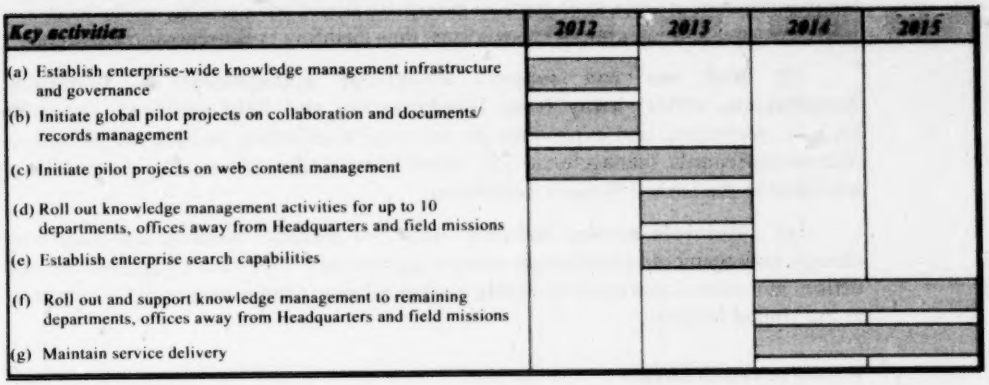
Websites will have a common look and feel because they will be built with common templates and a clear workflow for the approval of content. Effective governance and associated policies, procedures and standards will make the common brand and management of websites possible. Maintenance of websites will be easier and allow security of information to be effectively managed.

Enterprise search

75. Through the enterprise search component, the Organization will index a large volume of information and knowledge in various repositories and provide powerful search capabilities across these repositories. The enterprise search system will facilitate easy and seamless discovery of contextual information about different topics across the repositories. Initially, existing document repositories such as www.un.org, ODS and iSeek will be made available through this enterprise search system. This will be followed by adding the search functionality to documents/records management and collaboration environments. As new repositories are introduced, they will be included in the enterprise search, ultimately resulting in a one-stop search portal for the entire Organization, Member States and other stakeholders.

Schedule

Figure IV
Schedule of the "Leverage knowledge through ICT" initiative


Key activities
2012
2013
2014
2015
(a) Establish enterprise-wide knowledge management infrastructure and governance
(b) Initiate global pilot projects on collaboration and documents/ records management
(c) Initiate pilot projects on web content management
(d) Roll out knowledge management activities for up to 10 departments, offices away from Headquarters and field missions
(e) Establish enterprise search capabilities
(f) Roll out and support knowledge management to remaining departments, offices away from Headquarters and field missions
(g) Maintain service delivery

76. The four components of the "Leverage knowledge through ICT" initiative will be implemented and deployed in all United Nations Secretariat locations over two consecutive bienniums (2012-2013 and 2014-2015) through the following key activities (see figure IV):

(a) **Establish enterprise-wide knowledge management infrastructure and governance**. Activities include: setting up the technical infrastructure in New York and at the United Nations Logistics Base (UNLB) at Brindisi, Italy, to support collaboration, documents/records management, web content management and enterprise search; and developing governance, policies, procedures, roles and responsibilities and providing dedicated secretariat support to the Working Group on Knowledge Management;

(b) **Initiate pilot projects on collaboration and documents/records management**. Activities include: creating pilot projects in consultation with relevant departments and offices; enabling collaboration, communities of practice and expert locator capabilities; implementing policies, procedures, standards and guidelines; expanding deployment to other departments, offices, regional commissions, offices away from Headquarters and peacekeeping missions; implementing documents/records management projects for authoring official documents in at least one department and at each duty station away from Headquarters; and establishing service delivery, change management and training capabilities;

(c) **Initiate pilot projects on web content management**. Activities include: setting up a portal for departments at Headquarters for easy access to applications; revamping iSeek; implementing web content management infrastructure; developing common web content management templates and migrating some United Nations websites; developing web content management governance, policies, procedures, roles and responsibilities;

(d) **Roll out knowledge management activities for up to 10 departments, offices away from Headquarters and field missions**. Activities include: analysing and migrating content; enabling technologies to collaborate; helping with

information management, providing training and change management; expanding communities of practice and the ability to find experts;

(e) **Establish enterprise search capabilities**. Activities include: completing the procurement process to acquire an enterprise search tool; setting up the technical infrastructure; and integrating repositories, thus enabling cross-repository searches;

(f) **Roll out and support knowledge management to remaining departments, offices away from Headquarters and field missions**. Activities include: continuing and expanding the initiative's activities, making collaboration, documents/records management and related knowledge management capabilities available to the United Nations Secretariat;

(g) **Maintain service delivery**. Activities include: training, assisting with change management, establishing service agreements with client departments and offices and related activities to enable a vibrant knowledge management community at the United Nations.

Resource requirements

Table 4
Total resource requirements for implementation of the "Leverage knowledge through ICT" initiative
(Thousands of United States dollars)

Object of expenditure	*2012-2013*
Travel of staff	196.0
Contractual services	10 057.2
General operating expenses	1 059.6
Furniture and equipment	176.0
Total	**11 488.8**

Resource requirements for the biennium 2012-2013

77. The various components of the "Leverage knowledge through ICT" initiative are to be executed as an integrated programme of work, which is why all the estimates shown in this section are consolidated.

Travel of staff

78. The amount of $196,000 would cover the cost of travel of staff in 2012-2013. Since this is a global initiative, project staff will have to travel to United Nations operational locations away from Headquarters for workshops, training and coordination activities.

Contractual services

79. The amount of $10,057,200 would cover the cost of the components on collaboration, documents/records management, enterprise search and web content management in 2012-2013, as follows:

(a) An amount of $3,013,000 would cover the cost of additional software licence and maintenance for collaboration tools, web content management tools and additional search capability for approximately 1.5 million documents. The tools would be acquired incrementally, as the functionality is deployed to the various locations and staff members;

(b) An amount of $4,755,800 would cover the engagement of contractual personnel to carry out activities related to project management and functional work such as business process re-engineering, business requirements gathering, application development, application integration, business process automation and data migration, as well as ongoing service delivery and assistance to the user community;

(c) An amount of $572,600 would cover the cost of hardware and storage for the global infrastructure to support collaboration and web content management;

(d) An amount of $1,715,800 would cover the cost of change management and services related to the delivery of change management activities in 2012-2013. Change management is critical to the creation of a cultural transformation that would lead to the acceptance and use of integrated knowledge management tools within the Organization. Since these initiatives involve many new concepts, capabilities, skills and technologies, staff will need to carry out change management activities in order to properly fulfil their duties.

General operating expenses

80. The amount of $1,059,600 would cover common support costs, including rental charges, minor alterations of office space and telephone and facsimile services related to the contractor positions requested under this programme.

Furniture and equipment

81. The amount of $176,000 would cover furniture and equipment requirements for the proposed contractor positions, including office furniture and office equipment.

Biennium 2014-2015 and beyond

82. A preliminary cost forecast for the roll-out to the remaining departments, offices away from Headquarters and field missions, as well as the maintenance of the service delivery, has been estimated at between $8 million and $12 million. However, the forecast will be updated in subsequent progress reports in view of potential changes in requirements and be included in the relevant proposed programme budget submissions as further details become available.

C. Enhance information and communications technology service delivery

Background

83. The United Nations Secretariat devotes significant resources to the provision of a broad spectrum of ICT services on a daily basis. The nature and complexity of these services and the manner in which they are delivered vary widely. They include responding to requests for information, repairing photocopiers, fixing computers and troubleshooting remote access problems.

84. Service desks — organizational units that provide services to users — do not have standard work methods for keeping records, producing status reports or assessing the quality and cost of services, nor do they work in accordance with established best practices. In addition, despite the fact that there are at least 131 ICT service desks worldwide, support is not provided 24 hours a day, 7 days a week. Furthermore, the tools to support service desks and workstation operations are non-standard and limited in functionality. As a result, the quality and cost-effectiveness of service delivery are measured, monitored and delivered in a sub-optimal manner.

85. The critical role of ICT across the Organization and the high cost of related support services provide a particularly salient example of the negative impact of a fragmented approach to service delivery. Today, ICT is the backbone of the operations of the Organization. When a personal computer does not work, the staff member cannot work. Network failure can stop large numbers of staff from doing their work, thus incurring significant costs to the Organization both financially and in terms of the delayed delivery of substantive programmes.

86. At present, it is difficult to assess the quantity and quality of the service delivery processes in the Organization, a fact which keeps the Organization from efficiently assigning resources and establishing work units that can address the complexity and volume of services needed. In addition, the broad array of services requires solutions that are not always easy to access or provide because of the lack of standard workstation configurations across the Secretariat. This complexity, volume and fragmentation unnecessarily increases the cost of user services.

87. This report proposes a shift towards an enterprise ICT service model in which the common ICT needs of the various organizational units are addressed through regional service centres, thus significantly reducing local ICT service capacity at duty stations. Regional service centres employing standardized processes and technologies will also be capable of addressing service requests in other functional areas such as facilities, human resources, procurement and financial services.

88. To accomplish this objective, it is proposed that the existing enterprise customer relationship management system, iNeed, be fully leveraged and that enterprise ICT service desks be established to provide more efficient ICT services to all users, including staff, delegates and journalists. Furthermore, by leveraging the existing enterprise identity management system, iNeed will provide functionality to validate the identity of users and their requests, making the Secretariat less vulnerable to security problems. By adopting this approach, the Organization will realize substantial benefits through improved user satisfaction, cost-effectiveness and quality assurance in the delivery of services to users.

Objectives

89. The Office of Information and Communications Technology, with advice from the ICT Management Coordination Group[4] and key stakeholders from departments and offices, has identified the following key objectives for this initiative:

(a) Improve the quality, standards, availability and efficiency of ICT services across all duty stations by:

(i) Consolidating 131 ICT service desk functions into at least three enterprise ICT service desks to be located in different places and capable of providing services 24 hours a day, 7 days a week;

(ii) Providing all Secretariat offices with support for common applications such as Umoja, e-mail, Inspira, iNeed and the enterprise identity management system;

(iii) Continuing to support unique site-specific services locally, with a significantly reduced number of local ICT service desk staff;

(b) Implement an enterprise ICT global service catalogue that is integrated with other administrative service catalogues supported by iNeed;

(c) Identify the applications that are required by all users in order to create a minimal number of standardized workstation configurations;

(d) Implement business intelligence software to enable critical performance monitoring and management functions and thus to enable easier review of performance and other issues by the governance bodies;

(e) Maintain an integrated master project plan that includes timely progress reports to ensure transparency with regard to the initiative's status to all stakeholders, including Member States;

(f) Continue the selective deployment of iNeed for other administrative services areas, such as facilities, financial services (tax, insurance, travel reimbursement, benefits etc.) and human resources.

Box 5
Illustrative example: "Enhance ICT service delivery" initiative

Current problem

A staff member at a United Nations duty station has a problem printing a financial report that is needed by a high-level official in order to make a critical decision. The staff member first asks co-workers if they have encountered the problem before, then calls the local ICT service desk and is asked to reboot the computer. Unfortunately, this does not solve the problem. One hour has passed. The staff member calls the service desk again and is provided with the number of an expert. He calls the expert but is connected to an answering machine, which is how he

[4] The ICT Management Coordination Group consists of heads and senior staff of ICT units in departments and offices across the Secretariat. The Group functions as a forum for providing guidance and sharing views on ICT strategic programmes and other Secretariat-wide activities. It meets every four weeks by videoconference and holds two retreats annually.

finds out that the expert is away on leave for two weeks. The staff member calls the service desk again; he is quite irritated since two hours have passed and the high-level official is asking for the report immediately. In desperation, the staff member tells the high-level official about the problem. The official calls the Chief of ICT services asking for the problem to be resolved immediately. The Chief calls the head of the service desk to get quick action. Three hours have passed. The service desk head walks to the support desk and gets one of the experts to call the staff member. Fortunately, the expert, knowing that this is an easy problem to remedy, calls the staff member and asks him to press CTRL+F5. The report is printed. Four hours of the staff member's time have been wasted and, in the meantime, the high-level official has had to board a plane without the report. This problem would have been even more complicated had it been encountered during a journey or in the middle of the night.

Expected improvements

A staff member in a duty station is having trouble printing a financial report. She calls extension 3333 and is connected to a service desk agent, who queries the knowledge base for the printing error and tells the staff member to press CTRL+F5. The staff member gets the report to the high-level official in five minutes. While on the telephone, the agent shows the staff member how to access the online web portal with the knowledge base and bookmarks it for her so that in the future she can solve such issues on her own.

Organizational impact

90. Consolidating, modernizing and standardizing the existing ICT service desks and other administrative services will reduce current service delivery disparities and costs. An Organization-wide shift towards best practices and common technology tools will improve service availability and quality; provide disciplined, repeatable methodologies and processes; preserve and expand institutional knowledge; and produce savings.

Qualitative benefits

91. The "Enhance ICT service delivery" initiative will provide the following qualitative benefits to the Organization:

(a) **Agility**. By using best practice processes and common technology tools in all locations, service desks will be able to quickly and consistently resolve issues. In addition, reactive approaches will give way to proactive approaches, making it possible for issues like global cybersecurity threats to be identified and solutions to be swiftly propagated to other sites;

(b) **Accessibility**. The provision of multilingual support on a 24-hour-a-day, 7-days-a-week basis will greatly decrease the time needed to resolve problems while providing the world-class services that are vital to the Organization's global operations;

(c) **Improved processes and operations**. iNeed will provide an integrated suite of reliable, modern help desk tools that will enable the provision of consistent and effective services to users. Any excess staff capacity could be redirected to other work within the Organization;

(d) **Responsiveness**. First-call resolution tracking, self-service capabilities, speedier resolution and expanded knowledge base tools will dramatically increase service desk responsiveness. This improved responsiveness will allow users to return more quickly to their normal work;

(e) **Productivity**. Any computer or user downtime results in lost productivity. Tracking and reporting on service desk performance and conducting analyses on common problems will lead to an increase in service desk quality and performance. This will also aid in ensuring the transparency of negotiated service-level agreements by clearly defining when, where, what and how services are to be delivered. In addition, extended service desk availability and a single point of contact will provide continuity of services to all users in the Secretariat, at any time, from anywhere.

Quantitative benefits

92. Currently, the Organization spends approximately $135 million annually on ICT service desk operations, excluding costs associated with other administrative service desks operated in all duty stations, which are not available at present. The ICT service desk costs can be further broken down by components, namely, labour ($95.4 million) and equipment ($39.6 million). The ICT service desk and workstation environments are supported by approximately 835 full-time equivalent employees (618 staff and 217 contractors) at more than 131 service desks globally. After full implementation, the estimated overall savings would be between $39.7 million and $59.5 million, on an annually recurring basis. Some savings would be achieved as initiatives progress and it is expected that the full savings will be realized one year after full implementation (see annex IV). Listed below are the projected savings related to the specific functional improvements:

(a) **Self-service**. The introduction of self-service functions that allow users to request a service, reset their password and access a searchable knowledge base will reduce service desk volume and service agent time by an estimated 25 to 40 per cent, yielding savings of between $6.6 million and $9.9 million annually;

(b) **ICT asset management**. Automating the discovery of ICT devices and validating the needs for such devices will reduce service desk and workstation labour by approximately 10 per cent and provide savings in hardware and software by approximately 10 per cent as a result of the ability to leverage the information to reduce vendor contracts and licences. In total, the annual savings in this area are estimated at between $10.3 million and $15.4 million;

(c) **Service desk automation**. It is estimated that the introduction of standard service desk processes and technology tools, as well as automation processes for routing requests and real-time viewing of user information, will reduce service agent costs by between $1.4 million and $2 million annually;

(d) **Workstation standards**. A reduced set of workstation configurations (also called workstation images) will reduce workstation and service desk labour costs by 10 per cent each, due to the reduced complexity of workstations and a

corresponding drop in workstation requests to the service desks. In total, the estimated annual savings will be between $7.5 million and $11.3 million;

(e) **Workstation automation**. The introduction of enterprise-wide remote control and software distribution tools will provide capabilities for the service agents at the regional service desks to quickly restore workstations and provide workstation management tools to reduce incidents at individual workstations. This will reduce workstation support labour costs by approximately 15 per cent, producing estimated annual savings of between $7.4 million and $11.2 million;

(f) **Local service desk migration**. After the regional service centres are established in 2012-2013, common service functions will gradually be migrated to the regional desks, reducing local labour requirements by approximately 15 per cent and local equipment costs by 50 per cent. This will yield estimated annual savings of between $6.5 million and $9.8 million;

(g) **Automation of other administrative services**. The Office of Information and Communications Technology, the Department of Field Support and other ICT units will work closely with departments and offices to identify and prioritize key administrative services that could be improved through the adoption of the ICT service desk model. While quantitative productivity improvements are expected, they cannot be reported until a comprehensive analysis of these services has been undertaken.

Table 5
Estimated annual recurring benefits, by category, for the "Enhance ICT service delivery" initiative

(Millions of United States dollars)

Functionality	*Low end of estimate*	*High end of estimate*
Self-service	6.6	9.9
ICT asset management	10.3	15.4
Service desk automation	1.4	2.0
Workstation standards	7.5	11.3
Workstation automation	7.4	11.2
Local service desk migration	6.5	9.8
Total	**39.7**	**59.6**

Implementation plan

Approach

93. One of the significant revisions made to the project approach since the publication of the report of the Secretary-General on the status of implementation of the ICT strategy (A/65/491) involved leveraging previous investments and existing systems to the maximum extent. As stated above, a key element of the revised strategy is to leverage the existing investments in iNeed (a customer relationship management application) and identify the authentication capabilities of the enterprise identity management system. iNeed will be used in the enterprise ICT service desks and local service desks to provide a common tool for handling all

service requests. The enterprise identity management system will be used to supply a central directory of all workstation users and to authenticate access to appropriate services. The implementation approach consists of:

(a) Standardizing and reducing desktop images to increase commonality, reduce complexity at all locations and facilitate problem diagnosis and support;

(b) Implementing standard software distribution and remote access tools;

(c) Utilizing the iNeed application in all locations;

(d) Using an enterprise knowledge base to provide service desk agents and end-users with better, quicker and more accurate information;

(e) Optimizing and promoting the use of self-service options to minimize delays in reporting problems and status updates;

(f) Providing a common telephone extension number (e.g. 3333) for all locations instead of the numerous numbers in use at present;

(g) Gradually deploying iNeed to selected departments, offices, regional commissions and missions.

94. The initiative will be the first time that a comprehensive ICT service management functionality will have been fully implemented on a round-the-clock basis, leveraging both iNeed and the enterprise identity management system to equip the regional and local service centres. The aim is to incorporate existing and planned administrative service functionalities into this approach. As such, and subject to the agreement of senior managers of the Secretariat, it is planned that regional service centres will provide both ICT and other administrative services in the future.

95. iNeed was deployed in the enterprise data centre established at UNLB in 2010. The application will continue to be the standard technology tool to improve and manage all types of services throughout the Organization. It is expected that it will be the entry point for all service requests in the long term. There will be one telephone number or one Internet site that users can use to request any service. The system will then route all requests to the appropriate service desks. The full deployment of iNeed as the enterprise tool for service desks will begin with ICT services first and could be subsequently expanded to include other administrative services.

96. This initiative will comprise at least three regional ICT service desks, for example one in the Americas, one in Europe, the Middle East and Africa and one in Asia, which will provide services 24 hours a day, 7 days a week to all United Nations locations worldwide. The regional service desks, in conjunction with local service desks, will resolve all ICT service requests, either by telephone or through the iNeed self-service website, and will report back to the user on the status of their request. iNeed will record all service calls and the actions taken. Through this interaction, the Organization will be able to track and analyse the responsiveness and effectiveness of all requests, thus enhancing service workforce management.

97. The regional ICT service desks will include a reduced set of standard workstation configurations. This will streamline and improve incident and problem management workflows and tools, thus enabling service agents to respond and resolve problems in a timely manner. Standardized workstations will result in

improved management of hardware and software assets, leverage contracts with vendors through economies of scale and enhance ICT system security.

98. Regional service desks will provide support for all enterprise applications, at any location. Common application problems will be handled by the regional service centres rather than local service desks, as is the practice today.

99. iNeed will make use of a user self-service capability that will allow United Nations personnel to resolve their problems without the intervention of service agents or other technical staff, for example by searching the knowledge base or resetting their password by themselves through an easy-to-use tool. This has two benefits: users learn to support themselves (as is common today) and the workload of service desk agents is decreased.

100. Another key element of the initiative is to employ an automated ICT asset discovery and management capability. This will not only help the agents working on service requests and allow greater transparency for reporting and chargeback models, but also provide a key input for compliance with the International Public Sector Accounting Standards in terms of the inventory and valuation of assets.

101. It should be noted that, while this initiative will consolidate all ICT service desks, it will not replace the ongoing requirement for some local ICT personnel. It is a principle of the initiative to pursue an automated approach wherever feasible to reduce the dependence on local service requirements while providing the most cost-effective services. Figure V below provides a visual representation of the approach adopted in the context of the "Enterprise ICT Service Desk" initiative.

Figure V
Visual representation of the "Enterprise ICT Service Desk" initiative

Progress to date: customer relationship management

102. Since the customer relationship management concept was first introduced to Member States in 2008, some progress has been made towards its implementation using existing resources. iNeed has been deployed in the following departments and

offices at Headquarters: the Office of Information and Communications Technology and the Department of Field Support (for ICT service desk ticketing, generic service requests and certain manual aspects of ICT asset management); the Department of Management (for facilities management and financial information operations); and the Office for the Coordination of Humanitarian Affairs in New York and Geneva, UNLB, the United Nations Interim Force in Lebanon and the Economic and Social Commission for Western Asia (ESCWA) (for ICT service desk). Deployment will continue in 2011 to include the Accounts Division in the Department of Management, facilities management at UNLB, central support services in ESCWA and a self-service portal at selected field missions in the Middle East. The initiatives contained in the present report, with the added alignment with the "Enterprise ICT service desk" initiative, will result in significant progress in 2012-2013 towards the original vision of customer relationship management at the Secretariat. It should be noted that sponsorship of departments and offices will be secured in 2011 to ensure that the development of customer relationship management will meet key service needs in 2012-2013.

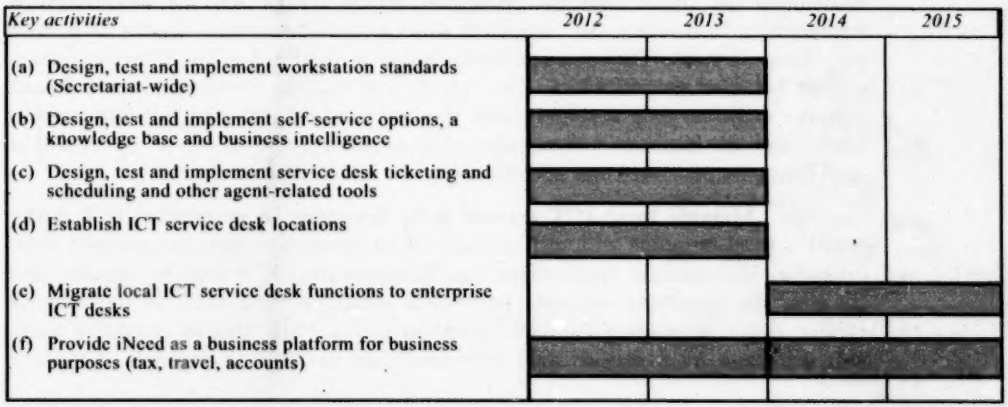
Progress to date: enterprise ICT service desks

103. On the basis of feedback from Member States, the Office of Information and Communications Technology has adjusted its approach to align both existing and planned initiatives such as Umoja and the global field support strategy to leverage existing systems and internal capacities to the fullest extent. Leveraging iNeed has significantly reduced the overall implementation cost of the enterprise ICT service desks. In addition, the Office has also aligned other existing initiatives to provide critical functionality related to security and directory services (enterprise identity management system). This will provide better user authentication, which is critical for self-service options (such as password reset) and will greatly enhance the speed with which requests for services are fulfilled.

Schedule

104. The timeline for the entire initiative is shown in figure VI. However, it is important to note that at this time tasks are being proposed for only 2012 and 2013 and that the initial phases shown below have been recast into a set of subprojects that could be executed within appropriate funding cycles.

Figure VI
Schedule of the "Enhance ICT service delivery" initiative


Key activities
2012
2013
2014
2015
(a) Design, test and implement workstation standards (Secretariat-wide)
(b) Design, test and implement self-service options, a knowledge base and business intelligence
(c) Design, test and implement service desk ticketing and scheduling and other agent-related tools
(d) Establish ICT service desk locations
(e) Migrate local ICT service desk functions to enterprise ICT desks
(f) Provide iNeed as a business platform for business purposes (tax, travel, accounts)

105. The "Enhance ICT service delivery" initiative will be implemented through the following key activities (see figure VI above):

(a) **Design, test and implement workstation standards (Secretariat-wide)**. A survey of all duty stations is being carried out in 2011 to provide information about the complexity and diversity of the end-user (workstation) environment of the Organization. Workstation standards will require all ICT chiefs to collaborate in 2011 in order to identify workstation hardware standards, customary workstation management tools and a reduced set of common workstation software tools such as operating systems, e-mail applications, browsers and anti-virus software. Agreement on the tools to be used, an implementation schedule and timelines to eliminate unneeded software and hardware contracts will be completed in 2012 and 2013;

(b) **Design, test and implement self-service options, a knowledge base and business intelligence**. Self-service options will be developed by the iNeed team on the basis of specifications provided by departments, offices and ICT service providers. In addition, the enterprise identity management system will develop an authentication functionality for workstation users that will allow them to reset their own passwords. In addition, all of the various types of network directories will be combined into one enterprise model. All of these activities are planned for 2012. In addition, an analysis of the global service catalogue will be performed in 2011, providing key criteria for the development of the request-for-service functionality in 2012. Existing knowledge bases will be accumulated in 2012 to provide a combined database of institutional knowledge about workstations by the end of 2013. This knowledge base will be enhanced by subject-matter experts in identified functional areas through the end of 2015 to assist in the migration of local ICT service desk functions to the enterprise desks;

(c) **Design, test and implement service desk ticketing and scheduling and other agent-related tools**. Service desk tools will be developed in iNeed to create, assign, track and report on the status of requests, as well as to make it possible to effectively and efficiently distribute the workload among service desk agents. In addition to the business intelligence tools with performance management capabilities, a suite of automated tools will be provided in 2012 in order to provide regional service desk locations with that functionality in 2013;

(d) **Establish ICT service desk locations**. As mentioned above, it is envisioned that three regional enterprise service desks will be established to implement a "follow-the-sun" approach so as to provide service support 24 hours a day, 7 days a week. The locations of the regional service desks will be determined on the basis of prioritized criteria, which will include communications, labour, logistics and time zone considerations. It is expected that this analysis will begin in 2012, when the locations will be selected, and that the regional service desks will be established by mid-2013 and operational by the end of that year;

(e) **Migrate local ICT service desk functions to enterprise ICT desks**. While a local presence will still be required for some activities, for example those related to site-specific applications and computer repair, it will be smaller once some of the functions currently performed locally are migrated to the regional service desks, leveraging the tools specified above. Fully trained migration teams will interview local service desk personnel late in 2013 to populate the global

knowledge base with common local user problems (and solutions). It is expected that these migration activities will start in 2014 and continue until the end of 2015;

(f) **Provide iNeed as a platform for business purposes (tax, travel, accounts)**. While completing a fully functional design for ICT services (through the enterprise ICT service desks), the same model could be used for other substantive service areas of departments and offices, such as tax, travel and accounts. It will be important to secure stakeholder sponsorship within substantive units to provide leadership in re-engineering selected substantive functions in 2012-2013. As enterprise initiatives like Umoja are implemented in 2014-2015, it will be important to ensure that ICT and departmental and office service desks follow a similar approach to provide effective, world-class services.

Resource requirements

Table 6
Total resource requirements for implementation of the "Enhance ICT service delivery" initiative

(Thousands of United States dollars)

Object of expenditure	*2012-2013*
Travel of staff	165.0
Contractual services	11 103.5
General operating expenses	443.3
Supplies and materials	1 166.1
Furniture and equipment	274.0
Total	**13 151.9**

Resource requirements for the biennium 2012-2013

106. The "Enhance ICT service delivery" initiative will be executed as an integrated programme of work, which is why all the estimates shown in this section are consolidated.

Travel of staff

107. The amount of $165,000 would cover the cost of travel of staff in 2012-2013. As this is a global initiative, it will be necessary for project staff to travel to United Nations operational locations away from Headquarters for workshops, change management and coordination activities.

Contractual services

108. The amount of $11,103,500 would cover requirements for the following activities:

(a) An amount of $3,947,300 would cover the costs of software to license service desk and workstation toolsets. This software will be acquired in stages, as the functionality is deployed to the various locations and staff members;

(b) An amount of $7,156,200 would cover the engagement of contractors for project management and functional work such as business process re-engineering, business requirements gathering, application development, application integration, business process automation and data migration activities, as well as ongoing service delivery and assistance to the user community.

General operating expenses

109. The amount of $443,300 would cover common support costs, including rental charges, minor alterations of office space and telephone and facsimile services related to the contractor positions requested under this programme.

Supplies and materials

110. The amount of $1,166,100 would cover the costs related to the establishment of regional service centres.

Furniture and equipment

111. The amount of $274,000 would cover the costs of the additional servers required for the infrastructure of the service desk software.

Biennium 2014-2015 and beyond

112. A preliminary cost forecast for the project has been estimated as accurately as possible at between $14.9 million and $22.3 million. This includes estimates for extending the activities started in 2012-2013, supporting migration teams, travel and change management investments in order to ensure successful local ICT service desk migration and smooth adoption by substantive end-users. However, the forecast will be updated in subsequent progress reports and requirements will be dealt with in accordance with established budgetary procedures as further details become available.

D. Create a resilient information and communications technology infrastructure

Background

113. Over the past decades, the Organization has built and maintained an ICT infrastructure and ICT facilities based on the needs of individual duty stations. This decentralized approach was consistently favoured and deemed necessary to ensure reliable infrastructure operations given that global data communications were not dependable. This model is still in use, and has resulted in the existence of at least 34 data centres and 177 server rooms across the Secretariat. In terms of distribution, 18 data centres and 63 server rooms are deployed at Headquarters, offices away from Headquarters and regional commissions and 16 data centres and 114 server rooms are deployed in field missions.

114. Over the past 10 years, there has been significant progress in facilitating interconnectivity among all duty stations through the new generation of communication technologies. Data centres, however, continue to operate in isolation, focusing primarily on supporting local needs. This modus operandi is

prevalent throughout the Organization, in large and small duty stations, including in the field.

115. Resources are dedicated not only to maintaining these duty station-exclusive data centres but also to providing separate disaster recovery facilities to back up the centres' information and systems. With the exception of the Department of Field Support, which provides disaster recovery facilities at UNLB for all its field missions, all other duty stations are individually responsible for their own back-up infrastructure. Duty stations that do not have the resources for an adequate disaster recovery facility simply have none or rely on other duty stations to handle this function in an ad hoc fashion, placing the Organization at risk.

116. The adoption of an enterprise approach and a shared-services model to support all Secretariat duty stations will lead to savings through economies of scale, gradually reduce the scope of local data centre facilities and provide disaster recovery services to duty stations according to their needs, thereby creating a resilient ICT infrastructure.

117. Duty stations have also taken a similarly decentralized approach to developing, implementing and maintaining local software applications. This individual focus ultimately comes at a greater cost to the Organization at large, as it requires more personnel, servers, storage and back-up (resilience) than would otherwise be necessary.

118. The rationale for continued decentralization is no longer valid. Enterprise systems, based on commercially available software, can address most of the needs of duty stations. Only in exceptional cases, in other words when highly specialized software applications are the only solution possible, should a duty station embark on developing infrastructure for a local purpose.

119. Pursuant to General Assembly resolution 63/269, the Secretariat's strategy is to shift towards the enterprise management of ICT infrastructure. In order to fulfil the request of the Assembly, the ICT strategy (see A/65/491) involved the transition towards a model consisting of only two enterprise data centres to host enterprise systems. Local data centres will continue to exist but their scope will decrease significantly as they focus only on systems that, by their nature, cannot be hosted in enterprise data centres.

120. This vision will be achieved by giving the Organization's data centres a leaner and more resilient structure, at two main locations: the enterprise data centre at UNLB and the secondary data centre in Valencia, Spain.

Objectives

121. The Office of Information and Communications Technology has reformulated the "Streamline data centres" and "Unified disaster recovery plan and business continuity approach" projects into an integrated initiative called "Create a resilient ICT infrastructure". In doing so, it has aligned the streamlining of data centres with ICT resilience to more effectively leverage the work that has been completed since the previous reports. In addition, requests for additional funding for future phases of the initiative will be submitted as part of the appropriate budget cycles of the United Nations Secretariat. For some tasks, the scope has been narrowed to Headquarters, offices away from Headquarters and regional commissions owing to the progress that the Department of Field Support has already made in creating the enterprise

data centres. Such focus will enable the Office to make significant progress with regard to the reformulated approach by pursuing the following key objectives:

(a) To implement two enterprise data centres, one at UNLB and one at the secondary data centre at Valencia;

(b) To host all enterprise applications (Umoja, e-mail, Inspira, iNeed and the enterprise identity management system) centrally, in enterprise data centres, thereby consolidating the infrastructure and support resources for the applications;

(c) To provide enterprise and local data centre monitoring and support 24 hours a day, 7 days a week from the enterprise data centres while achieving cost reductions through economies of scale;

(d) To continue to host unique, site-specific applications in local data centres;

(e) To maintain an integrated master project plan that includes progress reports to ensure transparency with regard to the initiative's status to all stakeholders. Advice and direction from existing substantive and ICT governance bodies will be sought throughout.

Box 6
Illustrative example: "Create a resilient ICT infrastructure" initiative

Current problem

Civil unrest is threatening the lives of United Nations staff stationed in a war-torn region. For their own safety, most of the staff have had to leave the local United Nations office and, in some cases, the region. The mission security team is trying to locate all staff to ensure their safety and administrative staff are scrambling to save data and set up operations elsewhere to quickly aid the citizens and provide information to the world about the crisis. It takes days to locate all personnel and, unfortunately, there is a risk that most if not all the critical data might be lost. It takes weeks to find a new location and set up operations again, severely jeopardizing personnel and rendering it impossible to report on the status of the crisis.

Expected improvements

By strengthening the resilience of the ICT infrastructure environment, text messages can be sent to all United Nations staff shortly after the crisis starts, providing them with information on where to assemble. Messages from staff are received and all staff are accounted for within several hours. At the predesignated evacuation site, staff are able to access their systems and quickly begin the critical work of swiftly reporting on the status of the crisis to Headquarters.

Organizational impact

122. The "Create a resilient ICT infrastructure" initiative will enhance ICT and substantive performance by enabling secure and reliable access to data and systems throughout the Secretariat, while improving productivity and agility at significantly reduced costs. The streamlined infrastructure based on the enterprise data centres concept would greatly improve the Organization's resilience in times of crisis and provide a key platform to host enterprise applications in the most efficient way.

123. Streamlining the Secretariat's computing infrastructure will not only increase operational efficiency; more importantly, it will provide significant benefits to departments and offices by providing quicker, easier implementation of new enterprise systems and technologies on a common, reliable platform.

Qualitative benefits

124. The "Create a resilient ICT infrastructure" initiative will provide the following qualitative benefits to the Organization:

(a) **Consistent enterprise server and storage management**. Standardizing the Organization's infrastructure will increase data centre performance and availability by streamlining support processes and procedures, cross-training technicians and increasing the use of systems contracts for capital purchases and maintenance across multiple duty stations. This will enhance the Organization's productivity by minimizing the downtime associated with outages;

(b) **Increased service delivery**. Reducing the resources used for routine data centre operational tasks and reassigning them to higher-value ICT functions will provide greater support for meeting the overall needs of the Organization;

(c) **Correct operational deficiencies and fewer risks**. Augmenting disaster recovery capabilities and business resilience through enhanced world-class facilities will mitigate risks and properly prepare the ICT infrastructure for all future initiatives. It will also ensure that the Organization can continue operating during and after crises;

(d) **Promotion of the sustainable use of ICT by reducing the overall carbon footprint**. Using fewer physical servers results in less power being consumed.

Quantitative benefits

125. Currently, the Organization spends approximately $104 million on data centres annually, including staff ($54.2 million) and equipment ($49.6 million) costs. In addition, approximately 552 full-time equivalent personnel are involved. At Headquarters, offices away from Headquarters and regional commissions (excluding missions), there is an annual cost of $42.2 million, and 248 full-time equivalent personnel are involved. After full implementation of the initiative, the overall estimated savings would be between $17.9 million and $26.9 million on an annual basis. Some savings will be achieved as initiatives progress and it is expected that the full savings will be realized one year after full implementation (see annex IV).

126. The above figures do not include the savings that will be achieved at field missions, which will be reported by the Department of Field Support. Consequently, the benefits set out in subparagraphs (a) to (c) below pertain only to Headquarters, offices away from Headquarters and the regional commissions. Furthermore, the figures do not include the estimated gains from avoiding losses to the Organization

related to data and/or business continuity costs incurred by substantive units that are impaired by crises. It is expected that the following savings will result from the specific functional improvements proposed under this initiative:

(a) **E-mail archives**. The introduction of software to provide one source for all e-mail archives at UNLB will result in less equipment and labour in all duty stations. It is estimated that this will yield savings of between $1.3 million and $2 million annually;

(b) **Storage optimization**. There are many duplicate files in the terabytes of stored documents that the Secretariat produces in the course of its activities. Removing duplicates is a critical step that should be taken before backing up data for resilience purposes. It is estimated that this will result in savings of between $1.3 million and $2 million annually;

(c) **Configuration of enterprise data centres**. The establishment of the centres will provide one location for enterprise applications for all duty stations. Savings related to local labour and equipment are estimated at between $4.9 million and $7.4 million (between $2.8 million and $4.2 million per enterprise application). It should be noted that, for the purpose of estimating the benefits presented in the present report, only one application (iNeed) was taken into consideration. Greater savings will clearly be realized as additional applications are consolidated for enterprise use. It should also be noted that the backing up of local copies of IMIS data is included in this benefit estimate;

(d) **Enterprise server and storage tools**. A reduced set of server and storage management and monitoring tools will decrease server and storage labour costs owing to reduced complexity and improved operational efficiency. The overall estimated annual savings would be between $5 million and $7.5 million. Collaboration between the Office of Information and Communications Technology and the Department of Field Support is required in order to ensure that enterprise server and storage management tools will be available for all environments;

(e) **Local server room migration**. After the enterprise data centres and the local data centres are established in 2012-2013, server rooms in each location will be migrated to the centres using a phased approach that will result in increased business continuity and savings of between $5.4 million and $8 million annually. It is expected that these benefits may not be fully realized until 2016-2017.

Table 7

Estimated annually recurring benefits, by category, for the "Create a resilient ICT infrastructure" initiative

(Millions of United States dollars)

Functionality	*Low end of estimate*	*High end of estimate*
E-mail archives	1.3	2.0
Storage optimization	1.3	2.0
Configuration of enterprise data centres	4.9	7.4
Enterprise server and storage tools	5.0	7.5
Local server room migration	5.4	8.0
Total	**17.9**	**26.9**

Implementation plan

Approach

127. One of the significant revisions to the project approach outlined in the report of the Secretary-General (A/65/491) is the alignment of internal initiatives to reduce the costs of implementation. A key element of the revised strategy is to leverage the significant investment in enterprise data centres at UNLB and Valencia to provide a resilient platform for the deployment of enterprise applications. It is important to note the distinction between the "Streamline data centres" initiative and the "Create a resilient ICT infrastructure" initiative (formerly known as the "Unified disaster recovery plan and business continuity approach"). The former will seek to harmonize all data centre locations to reduce local server rooms and provide an enterprise approach to server and storage management, while the latter will leverage the streamlined environment to provide an immediate back-up and business continuity configuration for the entire Secretariat. The two are related in that minimizing the costs of the resilience initiative requires reducing the locations, servers and storage. Essentially, it is more difficult to provide and maintain disaster recovery capabilities for a large number of sites with varied, diverse configurations. Network upgrades and coordination efforts are ongoing at all duty stations to prepare for this initiative. The Office of Information and Communications Technology and the Department of Field Support collaborated to formulate this approach to make the infrastructure ready for the global field support strategy and Umoja. Key elements of the implementation approach are:

(a) Establishment of the enterprise data centre at UNLB and a mirror resilience site in Valencia. Both facilities are the core elements in the overall strategy towards Secretariat-wide access to all enterprise applications. Significant work and planning is being carried out with the Department of Field Support to align the needs of the field with those of the rest of the Secretariat;

(b) Conformity of all applications to the architecture, policies and procedures of the enterprise and local data centres. The initiative will establish policies and procedures for hosting all enterprise applications. A timeline for planning and deployment will be formulated taking into account Umoja, Inspira and other enterprise applications. In collaboration with departmental stakeholders, local applications will be identified and tracked to enable future consolidation, thus reducing the associated infrastructure requirements;

(c) Standardization of the server and storage environment, including with regard to monitoring and management processes and tools for both the enterprise and local data centres. This will facilitate better resilience and mobility for staff since the skills needed to run the data centres are transferable. Additional key tasks are:

(i) Virtualization to reduce the number of server room servers, where feasible, before the consolidation of local server rooms into one local data centre per site; identification of a potential corresponding resilience site;

(ii) Reduction of the existing storage space through automated means before implementing resilience measures;

(iii) Implementation, across all locations, of a multi-tiered storage strategy based on an agreed upon time frame, to systematically store information less expensively;

(iv) Management of small locations remotely by pursuing an automated approach wherever feasible;

(d) Alignment of deliverables based on lessons learned from previous implementation steps and by the funding needs of stakeholders;

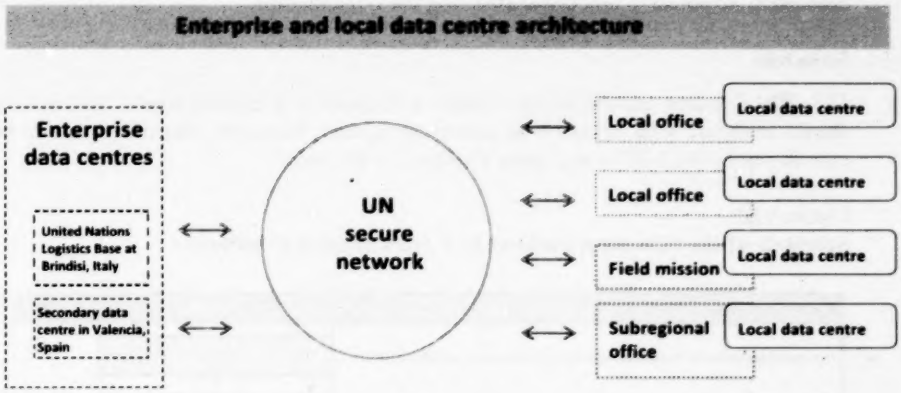
(e) Utilization of iNeed at all locations for infrastructure work order and requests for service transactions. All hosting and storage requests will be managed through the appropriate enterprise ICT service desk personnel and routed to the appropriate service entity.

128. Local data centres will have to continue to provide support for unique local applications, including building management systems, perimeter security and surveillance systems, cashier support systems, local e-mail and related applications in locations where the network is slow, local shared drives, directory systems, local Intranet and collaboration tools, local communications telephone billing systems, network infrastructure to connect to other offices, connection to the Internet and buildings, and radio and television production systems.

129. Towards the end of 2011, the Office of Information and Communications Technology will lead the process of collaborating with the ICT Management Coordination Group to analyse, select and implement a standardized server and storage management toolset for the Secretariat that will be deployed across all duty stations (through enterprise and local data centres). This approach will greatly enhance organizational resilience throughout the Organization. In the event of a catastrophe, the enterprise data centre will act as the crisis mitigation site and provide quick recovery to ongoing substantive operations.

130. As with the approach taken for the "Enterprise ICT service desks" initiative, the "Create a resilient ICT infrastructure" initiative was developed on the basis of feedback from Member States and key internal stakeholders. The Office of Information and Communications Technology has aligned existing and planned initiatives to leverage internal capacities fully. Consequently, the original proposed cost of the "Streamlining data centres" initiative has been significantly reduced. In addition, the Office has increased the Secretariat's ICT resilience capabilities by incorporating critical aspects of the "Unified disaster recovery plan and business continuity approach", including virtualization, storage reduction, e-mail archiving and resilience for IMIS.

Figure VII
Visual representation of the "Create a resilient ICT infrastructure" initiative



Progress to date: "Streamline data centres"

131. Despite limited resources, progress has been made in aligning key internal infrastructure projects to provide critical capabilities that have reduced the estimated costs related to the "Streamline data centres" initiative. Capital programmes such as the capital master plan at Headquarters, which has continued to make improvements to UNLB, and the progress achieved in the construction of the secondary data centre in Valencia have all been factored into the revised estimate. In addition, modest investments in network upgrades are expected in early 2012 to enable high-speed, multiple path connections across major duty stations; it is also expected that the enterprise data centres will invest in a wide area network replacement technology (Multiprotocol Label Switching). This progress and planned investment is critical to improving quality and reducing requirements for the "Streamlining data centres" initiative, including its resilience. However, because capital investments and budgets have been consistently reduced over the last few bienniums, the age and capabilities of the current data centre equipment are reaching a critical stage, which has heightened the need for immediate action to ensure continued operation. These factors were taken into account in the revised approach presented in the present report. The proposed investment for 2012-2013, together with the server and storage management tools described below, will prepare the environment for the deployment of Umoja and other enterprise applications.

Progress to date: "Increase ICT resilience"

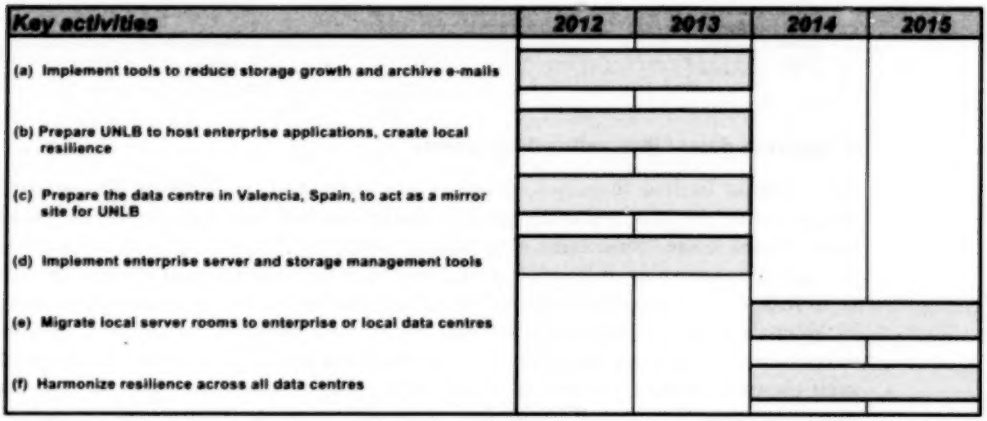
132. The alignment of internal infrastructure initiatives to better leverage internal capacities to the fullest extent has significantly lowered the proposed cost of the "Increase ICT resilience" initiative (formerly the "Unified disaster recovery plan and business continuity approach"). This reduction is due to the approval of the mirror site in Valencia, a world class facility, as a key resilience capability for UNLB. The site in Valencia will be in operation shortly and at a much lower cost to the Secretariat than commercially leased space. The pairing with the "Streamline data centres" initiative was natural as the two initiatives are complementary. In close conjunction with the Department of Field Support and other duty stations, the Office

of Information and Communications Technology has adjusted the initiative to provide full resilience across the Secretariat using the enterprise data centres. This will greatly reduce implementation costs while enabling a faster, planned and consistent response to any crisis affecting the Organization.

Schedule

133. The timeline for the entire "Create a resilient ICT infrastructure" initiative is shown in figure VIII below. It is important to note, however, that only tasks to be carried out in 2012-2013 are being proposed at this time.

Figure VIII
Schedule of the "Create a resilient ICT infrastructure" initiative


Key activities
2012
2013
2014
2015
(a) Implement tools to reduce storage growth and archive e-mails
(b) Prepare UNLB to host enterprise applications, create local resilience
(c) Prepare the data centre in Valencia, Spain, to act as a mirror site for UNLB
(d) Implement enterprise server and storage management tools
(e) Migrate local server rooms to enterprise or local data centres
(f) Harmonize resilience across all data centres

134. The "Create a resilient ICT infrastructure" initiative will be implemented through the following key activities (see figure VIII):

(a) **Implement tools to reduce storage growth and archive e-mails**. Activities include: implementing enterprise e-mail archival and storage optimization ("de-duplication") technologies to reduce storage and enhance resilience capabilities across the Secretariat;

(b) **Prepare UNLB to host enterprise applications, create local resilience**. The creation of an enterprise data centre will provide an effective and efficient platform to deploy enterprise applications like iNeed, Umoja and Inspira;

(c) **Prepare the secondary data centre in Valencia, Spain, to act as a mirror site for UNLB**. Once enterprise applications and ICT resilience have been established, it will be critical to have a mirror site to ensure the availability of data and resilience for UNLB;

(d) **Implement enterprise server and storage management tools**. This will increase efficiency while facilitating staff mobility and organizational resilience;

(e) **Migrate local server rooms to enterprise or local data centres**. While a local data centre presence will still be required for unique local applications, a smaller footprint will be required once functions have been migrated to the

enterprise resource centre and by leveraging the tools previously specified have been leveraged;

(f) **Harmonize resilience across all data centres**. Upon completion of a fully functional design for ICT resilience, additional harmonization of computing resources across locations and further application consolidation will provide additional benefits to the Secretariat by using the same model for selected common applications. This will require extensive departmental involvement and coordination and approval by the ICT governance bodies.

Resource requirements

Table 8
Total resource requirements for implementation of the "Create a resilient ICT infrastructure" initiative
(Thousands of United States dollars)

Object of expenditure	*2012-2013*
Other staff costs	511.2
Contractual services	4 369.5
Furniture and equipment	4 947.2
Total	**9 827.9**

Resource requirements for the biennium 2012-2013

135. The activities that need to carried out for the "Create a resilient ICT infrastructure" initiative are to be executed as an integrated programme of work, which is why all the estimates shown in this section are consolidated.

Other staff costs

136. The amount of $511,200 would cover the engagement of general temporary assistance equivalent to one post at the P-5 level to lead efforts to operationalize the enterprise data centres at UNLB and Valencia and IMIS disaster recovery initiatives.

Contractual services

137. The amount of $4,369,500 would cover the activities of e-mail archiving, storage reduction, server and storage management tools and creating the enterprise data centre in 2012-2013, as follows:

(a) An amount of $2,230,200 would cover the costs of software to license server and storage management tools. This software will be acquired incrementally as the functionality is deployed to various locations and staff members;

(b) An amount of $2,139,300 would cover the engagement of contractual services for project management and functional work such as technical process re-engineering, technical requirements gathering, integration development, application integration, server and storage process automation, and data migration activities, as well as ongoing server and storage delivery and assistance to the user community.

Furniture and equipment

138. The amount of $4,947,200 would cover the cost of furniture and equipment, particularly the infrastructure equipment necessary for the e-mail archival project, de-duplication and the set-up of the enterprise servers and storage tools.

Biennium 2014-2015 and beyond

139. A preliminary cost forecast for the project has been estimated as accurately as possible at between $11.6 million and $17.4 million, including the cost of extending the activities started in 2012-2013, supporting migration teams, travel and change management investments to ensure successful local server room migration and a smooth transition to the platform at the enterprise and local data centres by departments and offices. However, the forecast will be updated in subsequent progress reports and requirements will be dealt with in accordance with established budgetary procedures as further details become available.

E. Risk management

Risk mitigation approach

140. Risk assessment and management are vital steps in ensuring that proper risk identification, analysis and mitigation actions are taken into consideration, particularly in view of the importance and scope of the four ICT initiatives set out in the present report. The Secretariat has made considerable efforts to ensure that risks associated with these initiatives have been appropriately considered.

141. Each initiative has been thoroughly reviewed through the ICT governance framework and has complied with a best practice business case and risk mitigation methodology that ensures that risks are identified, scored and assessed from a cost-benefit, project delivery and organizational impact perspective.

142. Based on a review of the initiatives, the identified risks related to opportunity costs and implementation challenges are presented below.

Opportunity costs

143. If the initiatives are not implemented or if only minimal investment is made, ICT costs will continue to rise, potentially outstripping the ability of ICT staff to provide basic services throughout the Secretariat and vital solutions in areas of high demand such as knowledge management. The fragmentation of management practices and technologies will continue, resulting in difficulties for the Organization in effectively carrying out its mandates and substantive activities.

144. As enterprise systems replace local systems, the potential savings will become more significant. Not investing in systems and infrastructure will cause the costs of local application deployment and related support services to continue to rise.

145. At present, the Organization wastes valuable time and resources in "reinventing the wheel" or failing to access the highest quality expertise available. As a result, invention and/or innovation are hindered and the resulting downtime in affected services continues to compromise staff effectiveness and the delivery of outputs.

Implementation challenges

146. In the absence of strong senior management buy-in and commitment, the Organization's ICT capabilities and resources will continue to be carried out in vast silos at a significant cost. Therefore, leadership by high-level managers is critical for the successful governance and implementation of all initiatives.

147. The Organization needs to leverage past experiences and reapply them in similar situations, thereby enabling continuous improvement. As such, progress on all of the initiatives will be reported in a timely manner, using a performance-based framework jointly determined by the Office of Information and Communications Technology and the ICT governance bodies. As the initiatives are implemented, they will elicit feedback and direction from the governance bodies and make meaningful adjustments based on their direction and financial requirements. Lessons learned will be documented for future use.

148. A poorly implemented change management and communications strategy could compromise the acceptance by end-users, departments and offices of these major changes in the mode of operation. Proper change management efforts, including communication campaigns, readiness assessments, stakeholder management and training for roles, processes and tools that are crucial for the success of all initiatives, will be implemented.

149. Staff responsible for initiative-related functions need to be properly trained to provide services related to business and ICT functionality. In addition, if new functions are not thoroughly tested to ensure expected utility, users may not fully adopt the new functions. All plans related to the implementation of the initiatives call for adequate user acceptance testing and the cross-training of local staff.

III. Summary of resource requirements and actions to be taken by the General Assembly

A. Summary of resource requirements

150. As detailed in table 9 below, it is estimated that a total of $42,822,500 (at current rates) will be required in the biennium 2012-2013 for the implementation of the four enterprise ICT initiatives.

Table 9
Summary of net resource requirements, by initiative
(Thousands of United States dollars)

Initiative	*2012-2013*[a]
Improve enterprise ICT management	8 353.9
Leverage knowledge through ICT	11 488.8
Enhance ICT service delivery	13 151.9
Create a resilient ICT infrastructure	9 827.9
Total	**42 822.5**

[a] Preliminary estimates for 2014-2015 include the following: an additional $1 million-$2 million (excluding the continuing costs of posts and related common support costs of

$7 million), for the "Improve enterprise ICT management" initiative; an estimated $8 million-$12 million for the "Leverage knowledge through ICT" initiative; an estimated $14.9 million-$22.3 million for the "Enhance ICT service delivery" initiative; and an estimated $11.6 million-$17.4 million for the "Create a resilient ICT infrastructure" initiative.

151. It is proposed that the total resource requirements, as shown in tables 9 and 10, be financed from among the regular budget, the support account for peacekeeping operations and extrabudgetary resources, in the following percentages: 15 per cent from the regular budget, 62 per cent from the support account for peacekeeping operations and 23 per cent from the special accounts for programme support costs (to which overhead income generated by expenditures relating to technical cooperation and general trust funds, as well as reimbursement for administrative support provided by the Organization to extrabudgetary entities such as the United Nations Development Programme and the United Nations Children's Fund, are credited) (see A/65/491, para. 243). Each source of financing (regular budget, peacekeeping support account, extrabudgetary) will make a contribution calculated on the basis of the established share of the overall resource requirements.

Table 10
Summary of net resource requirements, by source of funds (full project cost at current rates)
(Thousands of United States dollars)

Initiative	*Regular budget*	*Peacekeeping support account*	*Extrabudgetary*	*Total*
Improve enterprise ICT management	1 253.1	5 179.4	1 921.4	8 353.9
Leverage knowledge through ICT	1 723.3	7 123.1	2 642.4	11 488.8
Enhance ICT service delivery	1 972.8	8 154.2	3 024.9	13 151.9
Create resilient ICT infrastructure	1 474.2	6 093.3	2 260.4	9 827.9
Total	**6 423.4**	**26 550.0**	**9 849.1**	**42 822.5**

Table 11
Summary of net resource requirements by source of funds
(Thousands of United States dollars)

Source of funds	*2012-2013*
Regular budget	6 423.4
Peacekeeping support account	26 550.0
Extrabudgetary	9 849.1
Total	**42 822.5**

Table 12
Total resource requirements for the implementation of ICT structural review projects
(Thousands of United States dollars)

Object of expenditure	*2012-2013*
Posts	2 883.6
Other staff costs	1 857.8
Travel of staff	511.0
Contractual services	26 028.2
General operating expenses	4 476.6
Supplies and materials	1 166.1
Furniture and equipment	5 899.2
Total	**42 822.5**

B. Actions to be taken by the General Assembly

152. **The transformational ICT initiatives presented herein will result in significant effectiveness and efficiency improvements in the Organization and continue the transition towards an Organization-wide coherent approach to ICT that is consistent with the expectations of Member States. The reliance on enterprise solutions and optimal use of ICT resources will provide significant benefits to the Secretariat in meeting its mission and programme goals. Such improvement is unattainable if the current situation is maintained.**

153. **The General Assembly is requested:**

(a) **To endorse the four initiatives ("Improve ICT enterprise management", "Leverage knowledge through ICT", "Enhance ICT service delivery" and "Create resilient ICT infrastructure");**

(b) **To note that, should the establishment of 14 posts for the biennium 2012-2013 be approved, the cost of the delayed impact is estimated at $2,325,600;**

(c) **To note also the proposal for the total resource requirements for the biennium 2012-2013, which are estimated at $42,822,500, to be distributed as follows:**

(i) **Regular budget: an amount of $5,639,100, under section 30, Office of Information and Communications Technology, and an amount of $784,300, under section 29D, Office of Central Support Services, of the proposed programme budget for the biennium 2012-2013;**

(ii) **Support account for peacekeeping operations:**

a. **An amount of $6,637,500, to be financed as an additional appropriation from the support account for peacekeeping operations for the period from 1 July 2011 to 30 June 2012, to meet the requirements related to all four initiatives for the biennium 2012-2013, as described in the present report;**

b. Future remaining requirements in an estimated amount of $13,275,000 would be considered in subsequent support account for peacekeeping operations requirements for the financial period from 1 July 2012 to 30 June 2013;

c. Future remaining requirements in an estimated amount of $6,637,500 will be included in subsequent support account for peacekeeping operations requirements for the financial period from 1 July 2013 to 30 June 2014;

(iii) Extrabudgetary resources: an estimated amount of $9,849,100 of the overall cost of all projects for the biennium 2012-2013 would be financed from extrabudgetary resources;

(j) To approve the following additional appropriations:

(i) An amount of $6,423,400, under the proposed programme budget for the biennium 2012-2013, for section 30, Office of Information and Communications Technology ($5,639,100), and section 29D, Office of Central Support Services ($784,300);

(ii) An amount of $6,637,500, under the support account for peacekeeping operations for the period 1 July 2011 to 30 June 2012.

Annex I

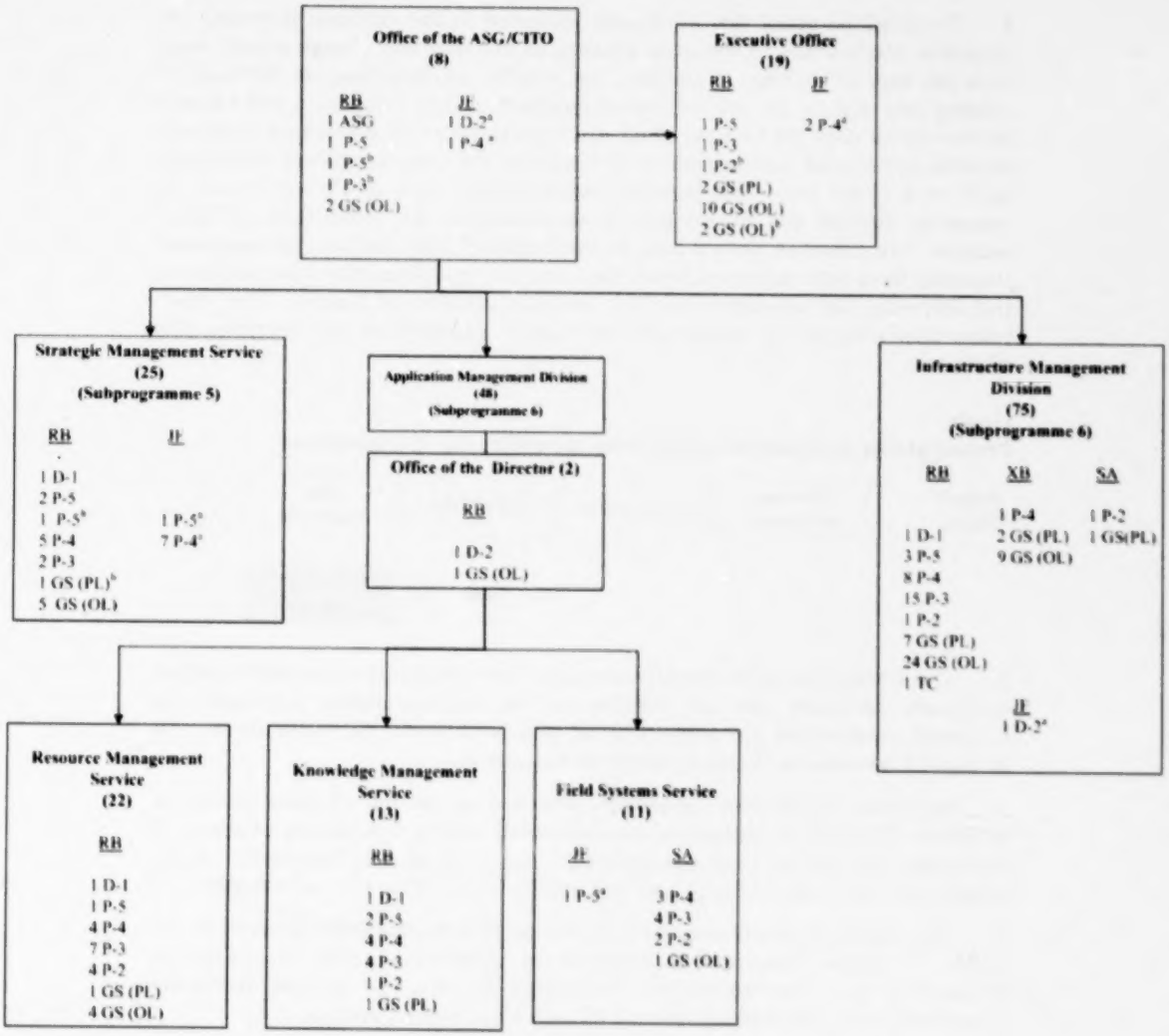
Mandate of the Office of Information and Communications Technology and resource levels

Mandate from approved ICT strategy (A/62/793)	*New/existing mandate*	*Resources provided*
Developing the ICT strategy for the Secretariat and coordination of its implementation (para. 35 (a))	New	Limited
Reviewing budgets from all funding sources for all ICT initiatives and operations of the Secretariat (para. 35 (b))	New	Limited
Monitoring, measuring and evaluating the performance of ICT units against established goals, objectives and budgetary targets, utilizing accountability frameworks as appropriate (para. 35 (c))	New	Limited
Setting the technological direction and architecture for the Organization (para. 35 (d))	New	Limited
Planning and developing all Organization-wide ICT applications, including, inter alia, an enterprise resource planning system and other major systems (para. 35 (e))	Existing	Limited (except for Umoja)
Planning and developing the overall infrastructure architecture encompassing the communications networks and data centres of the Organization (para. 35 (f))	Existing	Limited
Using the Organization's global presence and ICT infrastructure to develop and operate Secretariat-wide applications and infrastructure in order to maximize benefits and cost-effectiveness (para. 35 (g))	Existing	Limited
Undertaking, in collaboration with other ICT units, ICT research and development activities (para. 35 (h))	New	Limited
Overseeing the assessment and management of ICT risks for the Organization (para. 35 (i))	New	Limited
Developing and maintaining the information security policy of the Organization and monitoring compliance across operational units (para. 35 (j))	Existing	Limited
Managing the implementation of disaster recovery and business continuity plans for the Organization (para. 35 (k))	Existing	Limited
Coordinating ICT human resources management programme and activities, including staff development and mobility of all ICT staff in the global Secretariat (para. 35 (l))	New	None
Providing business consulting and project management methodologies and services to all ICT units (para. 35 (m))	New	Limited

Mandate from approved ICT strategy (A/62/793)	*New/existing mandate*	*Resources provided*
Monitoring, measuring and evaluating the performance and strategic alignment of all projects and investment initiatives in the ICT project portfolio of the global Secretariat (para. 35 (n))	New	None
Establishing ICT vendor management policies; reviewing and monitoring purchasing and contract renewal activities (para. 35 (o))	New	None
Implementing quality assurance processes to ensure that all policies, processes and standards are in compliance (para. 35 (p))	New	Limited
Establishing a client services function (para. 42)	New	Limited
Perform the Executive Office function of the Office of Information and Communications Technology	New	Limited

Annex II

Proposed structure of the Office of Information and Communications Technology for the biennium 2012-2013*



Abbreviations: ASG, Assistant Secretary-General; RB, regular budget; JF, jointly financed (regular budget, support account, extrabudgetary); GS, General Service; OL, Other level; PL, Principal level; XB, extrabudgetary; TC, Trades and Crafts; SA, special account.

[a] New posts.

[b] Redeployments.

* For the current structure of the Office of Information and Communications Technology, see A/64/6 (Sect. 29).

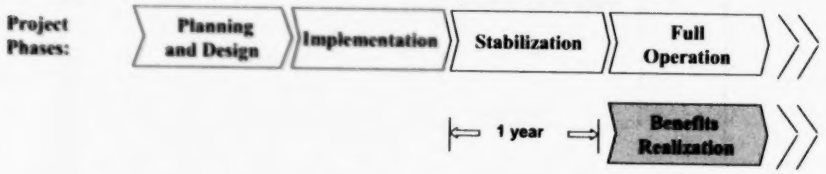
Annex III

Conditions that need to be in place for the benefits to be realized

1. It should be noted that all figures presented in the initiative proposals are estimates. The benefits are based on assumption that they may change several years from the time of writing. In addition, the benefits are calculated on the basis of existing data sources that are not always complete or fully reliable, in part because the Secretariat does not have the standards, tools and level of automation to provide accurate operational information on information and communications technology (ICT) on a global basis. The potential benefits shown here should not be seen as immediate savings and should not be considered in the formulation of future budgets. Any reduction should only be contemplated after the new processes and structures have been deployed for at least one year and once they have stabilized, and following the subsequent analysis and confirmation of benefits. The figure below shows the project phases and the benefits gained from the enterprise ICT initiatives.

Figure

Project phases and benefits gained from the enterprise ICT initiatives



2. The achievement of the benefits presented herein is based on several important conditions, including the full funding of the implementation proposals, the continued involvement and support of all stakeholders and the continuation of a strong ICT governance structure within the Secretariat.

3. Individual departments cannot be permitted to opt out of these enterprise initiatives. The benefits outlined in these proposals will be significantly weakened if exceptions are granted since economies of scale will be lost, standards will be undermined and levels of complexity will remain in the global ICT environment.

4. The classification authority for ICT jobs needs to be controlled centrally by the Office of Human Resources Management in collaboration with the Office of Information and Communications Technology in order to prevent individual departments from establishing separate ICT job classification systems.

5. Staff training and mentoring programmes need to be developed in collaboration with the Office of Human Resources Management to facilitate effective staff redeployments and migration to the new global staffing model.

Annex IV

Quantitative benefit analyses

I. Leverage knowledge through information and communications technology

	Estimate (millions of United States dollars)	
	Low end of range	*High end of range*
Information-sharing	**9.2**	**11.2**
Enhanced information-sharing across departments and locations[a]	3.0	3.7
Staff performance improvements[b]	4.2	5.1
Increased productivity due to reduced time needed to find information[c]	1.6	1.9
Decreased publishing turnaround time in all languages[d]	.18	.22
Implemented and enforced workflows for content creation and publishing[e]	.12	.14
Virtual meetings	**3.5**	**4.3**
Enhanced information-sharing and virtual meetings saving travel time and shortening meetings[f]	1.5	1.8
Enhanced information sharing and virtual meetings, resulting in a decrease in overseas travel expenses[g]	.94	1.1
Improved decision-making[h]	.88	1.0
Better communication between offices away from Headquarters and Headquarters[i]	.16	.19
Content and technology optimization	**4.7**	**5.7**
Cost avoidance by reducing disparate legacy systems[j]	.90	1.1
Lower call centre costs[k]	.18	.22
Consolidated official United Nations public websites around the world into a single site[l]	.32	.39
Consolidated servers and applications[m]	.18	.22
Reduced need for external web developers and administrators[n]	.64	.78
Efficient and standardized environment for all web-based services. Easier implementation of branding, accessibility and usability standards[o]	.08	.09
Faster creation of new websites and updating of existing ones. Faster integration of content management and collaboration information repositories[p]	.48	.58
Reduced labour requirements for the maintenance of websites. Increased productivity because staff require less time to find information and tools[q]	1.6	1.9

	Estimate (millions of United States dollars)	
	Low end of range	*High end of range*
Reduced printing	**1.4**	**1.8**
Greener United Nations through reduced printing and electronic document sharing and collaboration[r]	.67	.82
Cost avoidance by reducing physical storage space[s]	.81	.99
Content organization and access		
Enhanced information sharing across departments and locations[t]	4.0	4.9
Total	**23**	**28**

II. Enhance ICT service delivery

Enhance ICT service delivery	*Estimate savings (millions of United States dollars)*[u]	
	Low end of range	*High end of range*
Self-service[v]	**6.6**	**9.9**
"Request for service" will streamline and automate processes for requesting ICT products and services	1.3	2.0
"Password reset" will provide an online portal for resetting network passwords	2.6	4.0
"Knowledge base" will be used to collect information on common problems and provide an online portal to search for solutions	2.6	4.0
ICT asset management[w]	**10.3**	**15.4**
"Auto-discovery" will enable the collection of ICT hardware and software information per workstation user	7.6	11.4
"Performance management" will use business intelligence tools to capture both operational and strategic metrics	2.7	4.0
Service desk automation[x]	**1.4**	**2.0**
"Ticketing and agent scheduling" will make it possible to use service desk agents more efficiently and to enter and track tickets	0.7	1.0
"Business intelligence" will track service desk and workstation ticket performance (i.e., first call resolution, time to resolve, etc.)	0.7	1.0
Workstation standardization[y]	**7.4**	**11.2**
"Base configuration" (operating system, e-mail, browser, antivirus software, etc.) will provide a common core software image for all workstations so that systems can be deployed more quickly and images can be maintained more easily	3.7	5.6
"Policy-based administration" will provide role-based rules to prevent unauthorized software or system access, which will reduce the number of problems at workstations	3.7	5.6

Enhance ICT service delivery	*Estimate savings (millions of United States dollars)*[a]	
	Low end of range	*High end of range*
Workstation automation[z]	**7.5**	**11.3**
"Remote control" will provide technical support access to workstations, allowing for the more efficient use of technical resources	5.0	7.5
"Software distribution" will provide a standardized method for distributing software updates across all workstations	2.5	3.8
Local service desk migration[aa]	**6.5**	**9.8**
"Knowledge capture" activities will leverage the knowledge base capabilities to capture common local ICT problems, making it easier to resolve problems for regional ICT service desks	4.0	6.0
"Local service desk reduction" will provide local ICT resources with a greater ability to handle substantive tasks while transferring common ICT service desk functions to the regional desks	2.5	3.8
Grand total	**39.7**	**59.6**

III. Create a resilient ICT infrastructure

Create a resilient ICT infrastructure	*Estimated savings (millions of United States dollars)*[bb]	
	Low end of range	*High end of range*
E-mail archives[cc]	**1.3**	**2.0**
"Enterprise management of e-mail archives" will provide one location (enterprise data centre) for support personnel to manage all e-mail back-up activities	0.4	0.6
"Equipment consolidation" will be realized by removing the requirement for e-mail back-up at all duty stations (excluding missions)	0.9	1.4
Storage optimization[dd]	**1.3**	**2.0**
"Enterprise management" of storage for enterprise applications will enhance the efficient management and optimization of data. It will also ensure that critical data is stored efficiently in one location, for a quicker restoration of systems	0.2	0.3
Equipment consolidation will be realized by removing the requirement for enterprise application storage at all duty stations (excluding missions)	1.2	1.7
Configuration of enterprise data centres[ee]	**4.9**	**7.4**
"Enterprise data centre server management" will ensure that enterprise systems will have a resilient architecture and the support of a reduced number of support staff compared with previous methods of deployment	2.8	4.2

Create a resilient ICT infrastructure	*Estimated savings (millions of United States dollars)*[hh]	
	Low end of range	*High end of range*
"Enterprise data centre server consolidation and resilience" will be accomplished by hosting the application in one location characterized by world-class operations and resilience, thereby reducing the cost of implementing enterprise systems	1.1	1.7
"Enterprise data centre storage management" will ensure that enterprise systems will have an optimized storage architecture and the support of a reduced number of support staff compared with previous methods of deployment	0.6	0.8
"Enterprise data centre storage consolidation and resilience" will be accomplished by harmonizing storage in one location with full resilience for critical data, thereby reducing the cost of implementing enterprise systems	0.5	0.7
Enterprise server and storage tools[ii]	**5.0**	**7.4**
"Server monitoring and management tools for enterprise data centres and local data centres" will provide common toolsets across both enterprise and local data centres to streamline server operations and facilitate the harmonization of equipment across all duty stations	2.6	4.0
"Server monitoring and management tools for enterprise data centres and local data centres" will provide common toolsets across both enterprise and local data centres to streamline server operations and provide extended coverage for all duty stations	1.0	1.6
"Storage monitoring and management tools for enterprise data centres and local data centres" will provide common toolsets across both enterprise and local data centres to streamline storage operations and facilitate the harmonization of equipment across all duty stations	0.8	1.2
"Storage monitoring and management tools for enterprise data centres and local data centres" will provide common toolsets across both enterprise and local data centres to streamline storage operations and provide extended coverage for all duty stations	0.5	0.7
Local server room migration[jj]	**5.3**	**8.0**
"Local server room migration for enterprise data centres and local data centres" will combine existing local server rooms to increase security and resilience while reducing the need for equipment	4.0	6.0
"Local server room migration for enterprise data centres and local data centres" will combine existing local server rooms to reduce support requirements locally	0.7	1.0
"Local storage migration for enterprise data centres and local data centres" will combine existing local storage to increase security and resilience while reducing the need for equipment	0.5	0.7

Create a resilient ICT infrastructure	*Estimated savings (millions of United States dollars)*[aa]	
	Low end of range	*High end of range*
"Local storage migration for enterprise data centres and local data centres" will combine existing local storage to reduce support requirements locally	0.2	0.3
Grand total	**17.9**	**26.9**

[a] Save 10 minutes per week for 8,000 people with 65 per cent of that time being used productively.

[b] Staff performance improvements include enhanced effectiveness and efficiency due to better and faster decision-making, staff time savings, increased responsiveness to external events, improved management of organizational records, increased transparency and accountability, increased information security, protection of confidential information, better support to business continuity, improved capture of legacy content, among other factors. The assumption is that each one of the "active" documents in the system will contribute to the achievement of one or more of the above-mentioned benefits. The formula to calculate this benefit assumes 55,000 documents and the average cost of a staff member at the P-3 level. One hour per year is assumed to be the benefit that each document brings per year. The total benefit is calculated in terms of the number of documents per average staff cost per hour saved by each document.

[c] A study by the International Data Corporation showed that "an enterprise with 1,000 knowledge workers wastes $48,000 per week ($2.5 million per year)". It is estimated that, on average, 10 P-3 posts will be saved per 1,000 users.

[d] Today the content is not fully available in all languages. The new platform will save approximately one person per year by improving the productivity of the translators.

[e] Workflows will further increase staff productivity. Savings are estimated at 3/4 person per year.

[f] Save 10 minutes a week for 4,000 people with 65 per cent of that time being used productively.

[g] Eliminate the need for 10 trips per year at $7,000 per trip.

[h] Reduced time for meetings. Estimate is calculated on the assumption that 1/2 hour is saved per week by not having to hold meetings to decide on actions for 1,000 users. Half of the time may be used productively (1/2 hour (time saved) * 1,000 (users) * 52 (weeks) * $63 =).

[i] By being able to search for information across the enterprise in different time zones and not having to depend on the human knowledge worker to generate and provide information, the estimate is that the time of at least one person per year will be saved.

[j] The formula used to calculate this benefit assumes an average yearly cost of $50,000 to run/support legacy systems (including storage). The forecasted reduction in legacy systems is by 20 systems (total per year = number of systems * yearly cost to run the run/support the system).

[k] Fewer staff will be able do the same work. The estimate is that two fewer help desk technicians will be needed.

[l] Less time and fewer staff needed to keep the public websites up to date. Savings amount to approximately two fewer persons per year.

[m] New infrastructure will be appropriately configured and applications will be running on new, more efficient hardware. Consolidated architecture will be scalable and portable.

[n] A central development and design group will work on one technology. Savings are estimated at four developers per year.

[o] Templates will make it faster and easier to meet web-formatting requirements. Savings are estimated at approximately 2.5 persons per year.

[p] The savings are reflected in the number of persons required each year to plan, design and develop new websites. Savings are estimated at three persons per year.

[q] The savings are reflected in the number of persons per year required to maintain, revamp and improve websites that already exist on the new platform. Savings are estimated at two persons per year. By using content management systems to create and update websites, users will be able to create and find relevant information more efficiently. This will result in savings estimated by the work of at least eight persons per year in productivity across the Secretariat.

[r] Owing to better collaboration and electronic sharing of information there will be less need for printing.

[s] The formula to calculate this benefit assumes an average yearly cost of $75 per square feet. According to the forecast there will be a reduction in physical storage space of 10,000 square feet owing to better electronic document and records management. The total per year = square footage reduced * average cost per square foot.

[t] Increased efficiency and effectiveness owing to better organization of information. Save 15 minutes per week (46 weeks per year) for 7,000 people with 65 per cent of the time being used productively.

[u] These estimates are for savings after full implementation of the initiatives and do not reflect the savings for each year leading to full implementation.

[v] The assumption is that efficiencies will be gained in ICT service desk labour through a 20 to 30 per cent reduction in the volume of calls.

[w] The assumption is that there will be an efficiency gain of 8 to 12 per cent for support staff and savings of 8 to 12 per cent under equipment owing to licence harvesting and less shrinkage (inventory loss).

[x] The assumption is that there will be an increase in the efficiency of service desk staff of 4 to 6 per cent owing to the effective distribution of workload.

[y] The assumption is that an improvement of 8 to 12 per cent in service delivery will be made owing to easier fixes and reductions in the volume of calls.

[z] The assumption is that automation tools will increase the efficiency of workstation staff by 12 to 18 per cent.

[aa] The assumption is that there will be a reduction in local and regional service desk labour of 12 to 18 per cent owing to an increased scale and use of the knowledge base, and a reduction in local service desk equipment of 40 to 60 per cent.

[bb] These estimates are for savings after full implementation of the initiatives and do not reflect the savings for each year leading to the completion.

[cc] The assumption is that there will be a reduction in e-mail equipment of 8 to 12 per cent and in associated labour of 12 to 18 per cent, excluding missions.

[dd] The assumption is that there will be a reduction in storage-related equipment of 20 to 30 per cent and in storage-related labour of 4 to 6 per cent, excluding missions.

[ee] Increases infrastructure staff efficiency by between 18 and 22 per cent and results in equipment savings of between 8 and 12 per cent, excluding missions.

[ff] Increases efficiency of all infrastructure staff by between 3 and 5 per cent and results in equipment savings of between 1.5 and 2.5 per cent, including missions.

[gg] Significant reductions occur primarily in local server room equipment (28-42 per cent), local storage equipment (8-12 per cent) and local infrastructure labour (4-6 per cent) (facilities not included).